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RELATING TO

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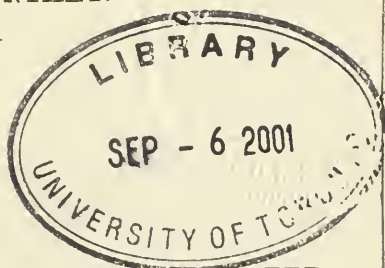
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THE
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**SOME LINES OF PROGRESS IN LARYNGOLOGY,
RHINOLOGY, AND OTOTOLOGY.**

PRESIDENTIAL ADDRESS.

Delivered before the British Laryngological, Rhinological, and Otological Association, October 26th, 1897.

By DUNDAS GRANT, M.A., M.D., F.R.C.S.

Gentlemen,—Whatever be the reason for which you have thought fit to elect me to occupy this chair for the coming year—whether it be simple lapse of time or the belief that I will exercise whatever small ability I possess to the best of my endeavour so as to promote the success of the Association—I tender you my hearty thanks for your having done so, and I offer you my heartiest assurance that I will endeavour to do credit to your choice.

The title I have selected for my address indicates, no doubt, that I have wished to allow myself as much latitude as possible without binding myself to be exhaustive. Whether this somewhat transparent craft and subtlety may have had the effect of deterring many from attending, or whether, on the other hand, it has roused, as I might wish, the curiosity and interest of those who delight in the vague, the events of to-day alone will show.

In the domain of LARYNGOLOGY advance has to take place along various lines, and we should be in error if we supposed that progress could be effected solely by means of the use of the laryngoscope and intralaryngeal instruments. General anatomy, physiology, histology, neurology, bacteriology, experimental researches on animals, serum inoculations, voice culture, and many other branches of medical and

allied sciences afford us indispensable help. Our *raison d'être* as specialists depends, however, chiefly on the perfection of our skill in the use of the instruments I have mentioned above, for which we, and mankind at large, are so much indebted to Warden, Babington, and, above all, Emanuel Garcia.

Perhaps one of the greatest gains to humanity from increased skill in laryngology lies in the possibility of the *detection* of *Malignant Disease* of the larynx at a period when it is still capable of removal with hope of recovery, whether by intra- or extra-laryngeal means. The case of epithelioma brought before us by Dr. Stoker¹ in this Association is almost a historical one. Fränkel² has drawn renewed attention to the possibility of the removal of malignant disease of the larynx by intralaryngeal operation, and his results are most striking. On the other hand, the reports of results obtained by extralaryngeal operation by Sir Felix Semon³ are more within the scope of the practical surgeon, and I cannot help thinking that it is in thyrotomy rather than in intralaryngeal surgery that we shall see our way to curative interference. It is obvious that without early diagnosis nothing radical is of any avail, and it is to this that our energy and activity should be devoted. It is true that, in the records of this Society, there are cases in which *Tracheotomy*⁴ has afforded complete relief, and has even appeared to prolong for several years a life whose immediate extinction was threatened. But this, although a desirable result, can only be termed a very relative success. *Complete Excision* of the larynx, with the attachment of the trachea to the front of the neck, is a new and highly successful operation so far as the technicalities are concerned, as shown in such cases as Mr. Lambert Lack's;⁵ but as Bryson Delavan⁶ has feelingly impressed upon us, other circumstances may outweigh the advantage to be derived from the removal of the disease, and life, even in case of cure, may be scarcely preferable to death.

The chapter on *Foreign Bodies* in the upper air passages is probably not yet complete. One of the most striking instances of misinterpretation of appearances being produced by a foreign body, is the one recently published by Mr. Richard Lake,⁷ who recognized a piece of bone in the trachea by means of the laryngoscope. The appearances had been previously supposed to indicate a syphilitic disease of the air tube. Such a work as that of our former President, Dr. Macintyre,⁸ and his fellow labourers in the field of *Skiagraphy*, will, no doubt, pave the way to the avoidance of similar errors, and we have every reason to look forward to great progress in this direction. The method of *Transillumination*⁹ of the larynx has come, to a singularly small extent, into vogue, but I feel

¹ Stoker, "Journ. of Laryng.," Vol. V., p. 169.

² Fränkel, "Arch. für Laryng.," Vol. VI., p. 362.

³ Semon, "Lancet," Dec. 15, 22, 29, 1894.

⁴ Grant, "Journ. of Laryng.," Vol. III., p. 193, and Vol. V., p. 304.

⁵ Lack, Lond. Laryng. Soc., "Journ. of Laryng.," Vol. XII., pp. 71, 72.

⁶ Delavan, "Brit. Med. Journ.," Oct. 26, 1895, p. 1029.

⁷ Lake, "Lancet," Sept. 25, 1897, p. 784.

⁸ Macintyre, "Journ. of Laryng.," Vol. XI., p. 20.

⁹ Volt Rii, "Monats. für Laryngol.," 1896, p. 295.

that its greater use might offer us results of considerable value. *Autoscopy* of the larynx, as devised by Kirstein,¹⁰ and brought before our notice in the excellent translation of his work by Dr. Max Thorner,¹¹ of Cincinnati, was demonstrated before us by Dr. Milligan,¹² at a recent meeting of this Association. It has been agreed by all that the method can never replace laryngoscopy, but it is evident that there is too much essential truth in the principle introduced by Kirstein for it ever to fall completely out of vogue, if only that it shows us how much can be done by means of a suitable tongue depressor; and the simplified Kirstein's apparatus will, probably, gradually find its way into routine work. Thorner's removal of a foreign body¹³ by its means is sufficient justification for the opinion which I have formed. In this connection I should like to remind you of the existence of a form of tongue depressor devised by Mount Bleyer¹⁴ a considerable number of years ago, which can be applied deeply into the pre-epiglottic fossa, and which has the effect of causing a forward and upward movement of the epiglottis when pressure on the base of the tongue is exercised. The instrument is not as well known as it ought to be, and an unconscious reproduction of it by Dr. Escat,¹⁵ of Toulouse, has been found of the greatest value in exposing the larynx of little children without the aid of the throat mirror.

Dr. Middlemass Hunt,¹⁶ in his recent communications, has reawakened the interest of the Association in the question of *Intralaryngeal Operative Intervention*, to the benefit, I am sure, of all who heard him, in spite of the fact that the instrument which the present speaker¹⁷ devised for the facilitation of some of these proceedings met with very scanty praise at his hands. I feel bound to admit that the use of such instruments has a tendency in the abstract to deter the budding laryngologist from devoting himself as thoroughly as he otherwise ought to the acquisition of the perfect skill required for the use of unguarded cutting instruments; but at the same time an instrument which, in suitable cases, can be used at the first sitting with success even by those only moderately experienced, and even without the use of cocaine in such hands as those of Poyet,¹⁸ of Paris, and Bark,¹⁹ of Liverpool, is surely not altogether to be condemned.

The *Neurological* aspects of laryngology afford immense opportunity for further work, in spite of the vast quantity of original research which has already been prosecuted with regard to it. There will always remain a certain number of laryngoplegias, more especially of one side, the origin of which will be shrouded in obscurity; but every year helps us a little further in our research if we only keep our minds from too great

¹⁰ Kirstein, "Autoscopy of the Larynx and of the Trachea"—"Arch. fur Laryng.," Vol. III., p. 156.

¹¹ Thorner, Philadelphia, 1896.

¹² Milligan, "Journ. of Laryng.," Vol. XII., p. 33.

¹³ Thorner, "Journ. of Laryng.," Vol. XII., p. 1.

¹⁴ Mount Bleyer.

¹⁵ Escat, "Arch. Internat. de Laryng.," etc., Vol. IX., No. 5; "Journ. of Laryng.," Vol. XII., p. 156.

¹⁶ Hunt, "Journ. of Laryng.," Vol. XII., p. 424.

¹⁷ Grant, "Lancet," June 3, 1893.

¹⁸ Poyet, private letter.

¹⁹ Bark, verbal communication.

narrowness. The law identified most especially with the name of Semon has recently been attacked²⁰ with a degree of vigour which detracts from the effect of the assault, and has failed to convince in the way that a less personal form of argument might have done. The writer has been met with his own weapons, and the only result has been, for the present at least, to establish the law of the proclivity of the abductors more firmly than ever.²¹ It is, however, to be greatly regretted that the issues in this interesting and all-important controversy should have been so much obscured by the importation of personal feelings and the exercise of rhetoric, when logic alone ought to have sufficed.

The occurrence of laryngeal paralysis in cases of locomotor ataxy has been long recognized, but more recently the interesting disease known as *Syringomyelia* or glioma of the spinal cord has been thought to be accompanied in many cases with affections of the upper grey tracts, and we may have ocular, laryngeal, pharyngeal, and other paralyses. An interesting study of the local conditions found in a number of such cases was brought by Dr. Cartaz,²² of Paris, before the French Society of Laryngology, Rhinology, and Otology in 1895.

Peripheral Neuritis is a disease of comparatively recent identification, and there is no reason why the laryngeal nerves should be exempt from it. Of all forms of peripheral neuritis the alcoholic is perhaps the most common, and I have within the last few years had the opportunity of seeing two cases which I believe to answer the description of alcoholic neuritis of the recurrent laryngeal nerve.²³ Heymann,²⁴ in his paper on the toxic paralyses of the larynx, records no similar cases, although he has ransacked the literature for everything of the kind, the only thing approaching it being apparently a bilateral paralysis of the abductors in a few instances of severe alcoholic intoxication in which the symptoms were threatening suffocation with laryngeal stridor.

Without attempting for a moment to refuse to the larynx its right of being primarily affected, whether by acute or chronic inflammation on its own account, I should like to lay great stress on *the Influence of Disease of the Nose* in producing a large percentage of various forms of laryngitis. In accordance with the description of some authors,²⁵ I should make a pigeon-hole for cases of secondary laryngitis—that is, of laryngitis secondary to nasal diseases—feeling sure that such an aspect of the case would facilitate our diagnostic and therapeutic attempts to a degree which a few years ago would hardly have been possible. I may for a moment dwell on the fact that the nasal condition giving rise to laryngeal trouble may be either of an obstructive or a suppurative nature. In simple obstruction the mere obligation to breathe through the mouth is of itself sufficient to determine a congestive condition of the laryngeal mucous membrane. If, on the other hand, the nasal condition is suppu-

²⁰ Grossmann, "Arch. für Laryng.," Vol. VI., p. 282.

²¹ Semon, "Arch. für Laryng.," Vol. VI., p. 493.

²² Cartaz, "Journ. of Laryng.," Vol. IX., p. 773.

²³ Grant, "Journ. of Laryng.," Vol. XII., p. 540.

²⁴ Heymann, "Arch. für Laryng.," Vol. V., p. 256.

²⁵ Grunwald, "Atlas und Grundriss der Kehlkopfkrankheiten," p. 55.

rative, we have the inhalation of pus microbes into the larynx producing maceration, proliferation, and in some cases atrophy of the mucous membrane. The term "pachydermia laryngis" is applied to a certain class of cases of laryngitis in which there is excessive proliferation of the epithelium, and this is in a fair number of cases secondary to nasal suppuration, about which I shall have more to speak hereafter.

In the therapeutics of congestion of the larynx, due so often to the misuse of the voice, I need hardly remind you that properly conducted *Vocal Exercises* and *Respiratory Drill* are of the utmost value, and, indeed, may be said to be invaluable. The teaching of our late and valued friend Emil Behnke cannot be forgotten in this Society; and, indeed, his splendid enthusiasm cannot have failed to inspire all who knew him. I personally was very much impressed by the remarks made in this Association by Dr. H. Curtis,²⁶ of New York, who advised a judicious and discreet use of the thin register in cases of laryngeal congestion to voice users, especially when the mode of voice production had brought about the formation of the so-called singer's nodules, whether in an advanced or incipient stage. His views are to be found fully described in his recent work on "Voice Building and Tone Placing,"²⁷ and I have myself found²⁸ that the use of the exercises he recommends are of the greatest value in shortening the period of abstention from duty necessitated by the occurrence of congestive or catarrhal conditions in its users. In this direction I believe much progress may be effected.

The questions in connection with diphtheria of the larynx are all important, and the value of *Antitoxin* is still somewhat vigorously discussed, like many other good things, such as I personally consider it. It may have suffered, no doubt, from over laudation, and it is necessary to give a hearing at least to those who take upon themselves, in the interests of truth, the analysis and criticism of the arguments advanced by its supporters. At the recent meeting in Montreal a paper²⁹ was read, in which the enthusiasm of the writer had led him to administer large doses of diphtheritic antitoxin in the most diverse forms of diseases, such as tubercle, typhoid fever, and various others. This is surely going too far, and, as Mr. Lennox Browne³⁰ has pointed out to us, a mode of action which is to some extent calculated to bring serum therapeutics into ridicule. At the same time it seems to me that, while questioning very strongly the ethical propriety of such proceedings as these experiments, we cannot shut our eyes to the actual results, and, if we can deduce nothing else, we certainly must find in these observations most incontrovertible evidence³¹ as to the safety of administering even large doses of diphtheritic antitoxin. On the other side we have to recognize that sudden death has in some instances taken place within a very short period after the administration, and the terrible experience of Prof. Langerhans³¹ has created an unfavourable impression, which is only very

²⁶ Curtis, "Journ. of Laryng.," Vol. VIII., p. 495.

²⁷ New York, 1896.

²⁸ "Journ. of Laryng.," Vol. XII., p. 640.

²⁹ MacCallum, "Lancet," Sept. 25, 1897, p. 823.

³⁰ Browne, "Brit. Med. Journ.," Oct. 9, 1897, p. 1031.

³¹ Langerhans, "Brit. Med. Journ.," April 18, 1896, p. 1009.

partially removed by Prof. Paltauf's³² vigorous advocacy of the serum treatment. He points out that sudden deaths among children are of such relative degree of frequency that too much stress should not be laid on the causal nexus in this instance between the antitoxin and the fatality. He quotes the observations of himself and his brother in the Pathological Institute of Vienna, in which otherwise unaccountable deaths after chloroform or other insufficient causes occurred in persons who were the subject of the so-called "lymphatic condition." In such persons there is a permanent hypertrophy of the lymphatic tissues throughout the body, including in particular the thymus gland. Whatever the bearing of these observations on the case in question, it is a matter to be kept well before the minds of those who have to carry out operative proceedings, as it may escape observation even by very competent performers of *post-mortem* examinations.

The study of RHINOLOGY has advanced by leaps and bounds within the last few years, and the tendency is, apparently, for it to absorb or displace both laryngology and otology. There can be no doubt both of the latter branches have gained immensely by the increased attention devoted to diseases of the nose, and their treatment carried out on purely rhinological principles would certainly meet with a very large measure of success, though in the interest of scientific accuracy it is highly desirable to prevent these principles from being pushed too far.

I have already spoken of secondary laryngitis, and perhaps the most striking cases which we meet with are those which owe their origin to the existence of *Disease in the Accessory Sinuses of the Nose*. These spaces have been attacked with extreme energy both from intranasal and extranasal aspects. The surgery of the frontal sinuses, of the antrum of Highmore, and of the ethmoidal cells, as practised by means of extranasal operations, has been eminently successful, but the ideal would naturally be to treat them through the natural passages, and it behoves us as specialists in rhinology to push this method of treatment to the very utmost which success will justify. Any means leading to this desirable end ought to be with us a subject of the most patient study, and among other measures which help us are the adoption of the various forms of canulæ devised by Hartmann,³³ Lichtwitz,³⁴ Krause,³⁵ and others, which enable us to penetrate, evacuate, and irrigate these cavities through the nasal speculum, as the nasal specialist should.

The various operations on the antrum of Highmore, and the indications for their performance, if not absolutely definite^a are at least fairly so. I should wish, however, to insist, as I have done before, on the importance of giving a full trial to methods of intranasal irrigation of the cavity, whether through the natural orifice or by means of an artificial opening in the inferior meatus, before resorting to treatment through the mouth in any case in which it is not fairly certain that the

³² Paltauf, "Brit. Med. Journ.," May 9, 1896, p. 1172.

³³ Hartmann,

³⁴ Lichtwitz, Jeanty, "Empyème latente de l'Ante de Highmore," Bordeaux, 1891.

³⁵ Krause, "Berlin. Klin. Woch.," 1889, No. 37, p. 815.

condition is due to dental disease. Such cases occur, and may even be associated with a considerable degree of fœtor, and to treat them in the first instance through the alveolus, or through the canine fossa, is, in my belief, unscientific and unjustifiable.

The successful cases brought before the Harveian Society by Mr. Lennox Browne,³⁶ in almost prehistoric times, form an incident in the history of the subject which is highly creditable to British specialism.

The sphenoidal sinus is now known to be comparatively within easy range, and the enlarging of the opening in its anterior wall is in most cases a matter of comparative ease to the practised intranasal manipulator. The instrument which can be employed for this purpose with the greatest safety is the hook devised by Hajek,³⁷ of Vienna, a worker in whom enterprise and caution are very admirably blended. In the use of the instrument I am bound to inculcate the necessity for the latter quality, but with judgment it is capable of producing most satisfactory results.

The frontal sinus cannot be irrigated from within in every case, but the number of cases in which it can is greater than was formerly supposed, and probably with increasing skill on the part of the rhinologist the percentage of eligible cases will be extremely high. Various canulæ have been devised for the purpose of reaching it, but as Hajek very properly states, there is no single curve adapted for all cases. The direction of the passage must be cautiously investigated by means of a pliable probe, and when the shape of probe capable of entering the cavity is found, a tube modelled to the same curve may be introduced for whatever purpose is desired. The removal of all obstructions from the lower extremity of the orifice of the infundibulum is best effected after the removal of the anterior extremity of the middle turbinated body. For this purpose the snare is sometimes all sufficient, but as a rule the proceeding is greatly facilitated by the use of punch-forceps for making a primary notch in the so-called neck of the body before the application of the snare, as recommended by Grünwald.³⁸ This materially facilitates the introduction of the instrument into the infundibulum and frontal sinus, while the removal of the posterior extremity renders the sphenoidal sinus more easily accessible.

One of the newest and most serious chapters in the story of modern rhinology is that one in which are described the occasional *Fatal Results of Suppurative Disease in the Nasal Cavities*. Dr. Sandford³⁹ narrated before this Association the case of an inmate of a lunatic asylum, in whom complete blindness occurred, and who died of meningitis. The original cause was found on *post-mortem* examination to have been a suppuration in the sphenoidal cell, which had burrowed through into the cranial cavity. This case is incorporated with a large number of others in Dreyfuss's⁴⁰ monograph, and teaches the risks and responsi-

³⁶ Browne, Harveian Soc., Feb., 1879.

³⁷ Hajek, verbal communication.

³⁸ Grünwald, "Lehre der Nasen-eiterungen," second edit.

³⁹ Sandford, "Journ. of Laryng.," Vol. VIII., p. 365.

⁴⁰ Dreyfuss, "Krankheiten des Gehirns und seiner Adnexa im Gefolge von Nasen-eiterungen." Jena, 1896.

bilities attaching to the adoption of too vigorous or too inactive measures in the treatment of diseases of the accessory sinuses of the nose.

IN OTOTOLOGY we have to record new facts and observations made, and new questions broached.

Among the former are certain points in connection with *Sclerosis of the Middle Ear*, which may be most truly said to be the *bête noir* of the otologist. I have long been struck by the fact of the remarkable preponderance of the female sex among those affected in the most typical way with this incurable disease. My perusal of Bezold's⁴¹ statistics has shown me that my experience is not isolated, and the fact is one which I must ask you to accept. The question arises as to the cause of this peculiarity, and it is not an easy one to answer. The affection seems particularly to be limited to the stapedio-vestibular articulation, with a tendency to extend beyond it to the neighbouring portions of the labyrinth. It frequently arises in the unmarried female and the barren. In such there is a tendency to the development of the so-called chronic osteo-arthritis, and this is probably the condition produced in the stapedio-vestibular joint. Again, although doubt has been cast upon the constancy of the observation (and my friend Dr. Gibbons assures me that his doubt on the subject is founded on the investigation of a large number of cases), there is a very general consensus of opinion that sclerosis frequently starts after parturition, and becomes aggravated with the birth of each child. In regard to this, there are some well-recognized observations by Ducrest,⁴² Moreau,⁴³ and others which have lately been brought to my notice by Prof. Kolisko, of Vienna, on the subject of osteophytic deposits developed between the cranium and the dura mater, and found with a fair degree of frequency in women who have died in child-bed, more especially those who have suffered from puerperal eclampsia. I have no data enabling me to associate this with the development of diseases in the capsule of the labyrinth, but I throw it out as a possible explanation of another set of cases of sclerosis.

The pathological anatomy of sclerosis in its advanced stages has been demonstrated most perfectly by Professor Politzer,⁴⁴ who has in a number of instances found in old people a very marked degree of osteitis of the outer wall of the labyrinth. Bezold has also published (Bezold, "Arch. of Otol.") the microscopical appearances in a typical case, showing osseous ankylosis of the stapes. Unfortunately, dissections of sclerosis in its earliest stages are hardly to be found; but the investigation of such cases when a death from accident or coincidental disease occurs would be of the greatest interest to the otologist.

Our treatment of such cases is still very imperfect; but if we keep in mind the osteo-arthritic, the syphilitic, the gouty forms of arthritis, and found our treatment upon such a basis, it is more likely to be crowned with

⁴¹ Bezold, "Uebersicht ueber den Gegenwartigen Stand der Ohrenheilkunde," Wiesbaden 1895.

⁴² Ducrest, "Recherches sur une Production Osseuse à la Surface du Crâne chez les Femmes Mortes en Couches."—("Mém. de la Soc. Méd. d'Observ.," Paris, 1844.)

⁴³ Moreau, "Osteophytes Crâniens."—("Bull. Soc. Anat. de Paris," 1844.)

⁴⁴ Politzer, "Journ. of Laryng.," Vol. VIII., p. 286.

success than if we devote ourselves with more energy than discretion to repeated inflations of the tympanum. Less mischief and better results are produced by repeated suction, or rarefactions, or so-called massage, practised through the external meatus; and I commend it very strongly to your use when inflation—as is very often the case—appears to do more harm than good. Intratympanic operations have been the object of a very interesting investigation by Arthur Cheate.⁴⁵ The opinions as to the value of these operations, as given to him by various well-known otologists, are interesting on account of their variety rather than their definition. Much disappointment has followed the adoption of intratympanic operations in unsuitable cases, and much enthusiasm has been aroused by their adoption in cases in which, in my belief, other measures were more likely to produce beneficial results. It remains for the future to decide as to which are the cases that will be benefited by such treatment, and by such treatment alone. For my part, I have seen reason to be gratified with the result of exploratory tympanotomy—certainly when practised for diagnostic purposes, and, within certain limits, for therapeutic effect.

Recent proposals to employ digestive ferments, and, in particular, pepsine derived from the dog (with astonishing results, according to the records of the introducer, Kysper-Cohn⁴⁶), have been submitted to further tests by Treitel,⁴⁷ with the result which would naturally be expected, that they have not fulfilled the sanguine expectations which were formed of them. Whether from courtesy or from conviction Prof. Treitel has concluded his paper with a recommendation that a further trial should be accorded this method. It does not seem to me that we have here a very promising field, but it is the unexpected which takes place, and I am quite prepared to have this expression of opinion controverted.

The endeavour to maintain a permanent artificial perforation has been long a problem, and it is certainly one which has not yet been absolutely solved. We seem, however, to have got within a certain distance of its solution, as Ferdinand Alt⁴⁸ has recorded several cases in which a perforation of the membrane has been kept up by the injection of vaseline oil through the Eustachian tube. The publication of his observation brought to my recollection two similar instances in my own practice in which a perforation in the membrane had remained open for several months in cases in which this plan of treatment had been adopted.

The *Healing of Old-standing Perforations* has also been reported by Okuneff⁴⁹ (the originator of the method), Gompertz,⁵⁰ and Alt⁵¹ by the application of deliquescent trichlor-acetic acid to the edges of the opening, with the result of bringing about a permanent closure after many years of patency. I have myself practised the method in several cases, and have actually succeeded in producing a film of some sort over a long-

⁴⁵ Cheate, "Practitioner," May, 1897.

⁴⁶ Kysper-Cohn, "Arch. of Otol.," April, 1897.

⁴⁷ Treitel, "Verhandlungen der Deutschen Otologischen Gesellschaft," Jena, 1897.

⁴⁸ Alt, "Monats. für Ohrenheilk.," March, 1897.

⁴⁹ Okuneff, "Monats. für Ohrenheilk.," Jan., 1895.

⁵⁰ Gompertz, "Wien. Klin. Woch.," 1896, No. 38.

⁵¹ Alt, "Monats. für Ohrenheilk.," March, 1897.

standing perforation. It was extremely beautiful to see the new vessels forming around the perforation, which previously had been absolutely pale and cicatricial, but it was disappointing to find the film gradually breaking down and disappearing within a week or ten days after its complete formation. I have also been unfortunate enough to reawaken the discharge in a quiescent ear, but it has apparently been of a non-infective nature, and has subsided without any further mischance. With more experience, and more improved technique, I feel that the result desired may yet be attained, and I trust that such may be the case in other hands as well as mine.

In acute *Suppurative Inflammation of the Middle Ear* the multiplicity of the remedies recommended seems to indicate that none among them is of constant efficacy. The aseptic method has been formulated by Pes, Gradenigo,⁵² and others, and consists in sterilization of the auricle and meatus, the introduction of iodoform gauze into the meatus, and the application of a sterilized wool dressing over the auricle so as to prevent further infection from without. On the other hand, Dench⁵³ is still an advocate for the antiseptic plan of syringing and introducing antiseptic "drops." Although in general an adherent of the latter plan, I have found the former successful under favourable circumstances. Whether or not we accept in its entirety Lermoyez's⁵⁴ view that the invasion of staphylococci from without is the invariable cause of obstinacy of suppurative otitis, its influence on our treatment is of the best, enforcing as it does a degree of cleanliness such as was formerly too often conspicuous by its absence.

The *Residua of Suppuration in the Middle Ear* frequently occasion defects of hearing similar to those resulting from sclerosis, but differing from the latter in their lesser tendency to progress from bad to worse, as also in their greater amenableness to treatment. The operations are not, as a rule, "typical," and they often tax the ingenuity of the aurist to the utmost in his endeavours to loosen the vibrating parts with the least degree of traumatic interference. The subject is now dealt with at considerable length in the larger text-books, and I gave the results of what I found to be a very interesting study of it in one of my published clinical lectures.⁵⁵ This is truly the hopeful hunting-ground for the intra-aural operator, and it is here that in the future he will have his happiest results.

Parvis componere magna, the Dangerous Sequelæ of Suppurative Otitis must in the future, as in the recent past, afford material for the most anxious study. This must take more than one direction. In the very first place the responsibility lies on the aural specialist of perfecting to the utmost the so-called "conservative" methods of treatment.

This is, in my opinion, not so much a matter of the selection of remedies as of determining the locality in the middle ear in which the disease is mainly focalized. One of the greatest advances in this respect

⁵² Pes and Gradenigo, "Zeitsch. für Ohrenheilk.," Vol. XXXVIII., p. 65.

⁵³ Dench, "Amer. Med. Surg. Bull.," Oct. 24, 1896.

⁵⁴ Lermoyez, "Ann. des Mal. de l'Oreille," Jan., 1895.

⁵⁵ Grant, "Clin. Journ.," Dec. 23, 1896.

has been the recognition of disease centred in the attic of the tympanum, showing itself by the pointing of abscesses or the presence of perforation in the membrane of Shrapnell. Again, it may result in losses of substance in the outer osseous wall of the attic, this being sometimes accompanied by subsidence of the disease—spontaneous natural operation. Like ourselves, nature very frequently leaves her operation till too late, with the disastrous results too painfully familiar to the experienced. If untrustworthy as to the selection of the time for the operation, nature's hint as to the method is well worth our attention, and we must be prepared to remove the outer wall of the attic without damaging the auditory mechanism. Prof. Politzer⁵⁶ has recently made a most interesting pathologico-anatomical study of the diseases of the outer attic, and now recommends as the most likely form of instrument for the purpose of opening it the tack-headed burrs which I brought to his notice several years ago, and which I have shown to this Society⁵⁷ when attic disease was discussed by Dr. Bronner.⁵⁸ With improved cutting edges, and a dental engine which will work true, good results will in all probability be obtained. Ballance recently brought before the Neurological Society a dental instrument which seems well adapted for the purpose. The irrigation and sterilization of the parts may be productive of good results, and should be practised in the first instance. Such an intratympanic syringe as Milligan's⁵⁹ is not likely to be surpassed, and it should be prepared at hand, but used with discretion and under good illumination. Stoker's⁶⁰ oxygen treatment has in his hands been followed by unquestionably satisfactory results, however we choose to interpret them, and in the future they must not be overlooked. Whatever the nature of our conservative treatment, nothing will justify omission to watch for the slightest indication of deeper extension toward the meninges, the sinuses, or the encephalon, so that our interference, whether bold or timorous, may be timely and unwavering. What these "slightest indications" are cannot be absolutely laid down at present except in a rough way. Let us endeavour in the future to attain greater definiteness.

The recent modifications of the mastoid operation have been often discussed, and I shall not enlarge on them at present. I must, however, refer to the satisfaction it has often given me when opening the antrum to find an opening into the middle fossa and into the groove for the lateral sinus, however produced, so that either pus has been allowed to escape, or its absence has been ascertained. Arbuthnot Lane⁶¹ has long advised the intentional opening of both these cavities, and in the recent Congress at Moscow, Heymann and Botey⁶² have simultaneously made the same recommendation, advising the resection of the superior wall of the osseous meatus in its entire extent. Where there is any suggestion

⁵⁶ Politzer, "Monats. fur Ohrenheilk.," July, 1897, p. 289.

⁵⁷ Grant, "Journ. of Laryng.," Vol. X., p. 302.

⁵⁸ Bronner, *ibid.*, p. 297.

⁵⁹ Milligan, "Journ. of Laryng.," Vol. VI., p. 516.

⁶⁰ Stoker, "Journ. of Laryng.," Vol. X., p. 109.

⁶¹ Lane, "Lancet," Sept. 26, 1891.

⁶² Heymann and Botey, "Journ. of Laryng.," Nov., 1897.

of the involvement of intracranial structures, I believe it will give us improved results if we adopt this method as a matter of routine at the time we do the mastoid operation.

Before the cases come into our hands valuable time is too often lost, and, without wishing to overlaud our specialty, I feel very strongly the necessity of the family practitioner being taught the responsibility he undertakes when treating or watching a case of suppurative otitis. It is therefore our duty to propagate the knowledge of this fact without arousing undue alarm. I share most strongly the views expressed by Field⁶³ in an address in which he discussed the indications for paracentesis of the membrane, but I feel bound to agree with Sir William Dalby⁶⁴ that it is putting the matter too strongly to say that, "owing simply to the non-discovery of pent-up pus in the tympanic cavity, scores of children die or fall victims to chronic hydrocephalus or complete idiocy." The element of error in this statement must not be allowed to overshadow the obvious amount of truth it contains.

Pyæmia of otitic origin has been made the subject of very compendious treatises, and notably of Hessler's⁶⁵ exhaustive work on the subject. The names of Horsley, Zaufal, Ballance, Macewan, and Lane are identified with some of the most brilliant landmarks in the operative treatment of the condition, especially when arising from thrombo-phlebitis of the sigmoid sinus. We must, however, carefully remember that it does occur without this association, and that recovery takes place in many such cases without any operative treatment beyond the clearance of the focus of infection in the petrous bone. We must, therefore, not be unduly eager to ligature the internal jugular vein without the full assurance afforded by exploration of the sinus that thrombo-phlebitis has occurred. Even then the indications are still somewhat undefined, though in case of doubt there is probably greater safety in practising than in omitting ligation.

Among the most interesting directions in which otology may spread is the *neurological* one, and we have to study disturbances of hearing as localizing symptoms in disease of the central nervous system and nervous disease as causes of disturbance of hearing.

An elaborate and dangerously fascinating study of the disturbances of hearing associated with hysteria has been issued by Prof. Gradenigo.⁶⁶ He inspires his readers with his own conviction, that hysteria enters very largely into many of the cases of deafness with which we have to deal; but there is a danger of our being led into the supposition that every case which we fail to cure by the use of the ordinary appliances is unyielding on account of the hysterical element. This is a comforting conclusion—for our consciences—when a case that has defied our most careful treatment yields to some insignificant change in the way of drug, diet, climate, environment, or quackery, to which no other influence except that of "suggestion" can be attributed. On the other hand, Prof. Gradenigo utters a warning of the gravest importance. He reminds us

⁶³ Field, "Brit. Med. Journ.," June 12 and July 31, 1897.

⁶⁴ Dalby, "Brit. Med. Journ.," July 24, 1897.

⁶⁵ Hessler, "Otogene Pyæmie," Jena, 1896.

⁶⁶ Gradenigo, "Die Manifestationen der Hysterie am Gehororgan," Jena, 1897.

that one of the best known features of hysteria is the tendency to the arousing of the most alarming paralytic or mental symptoms under the influence of traumatism. We must, therefore, employ manipulations of the mildest kind only, lest we add traumatic hysterical affections to the difficulties already present. The major forms of hysterical deafness recently formed the subject of an interesting discussion in the Medical Society on the occasion of the narration of a case by Hector Mackenzie.⁶⁷ In any case, without allowing ourselves to be too much carried away with the subject, so as to see hysteria in every case, we should make it our duty to acquaint ourselves with the most reliable stigmata of the condition otherwise, so that we may the more philosophically put up with the "cussedness" of the subjects of it, and treat them as their afflictions demand.

The localization in the central auditory track of the disease giving rise to nerve-deafness is still a matter teeming with problems of the greatest interest and importance. As a rule it has to be founded on other than otological data, as Siebenmann⁶⁸ has pointed out in his recent monograph on the "Central Auditory Track," especially in reference to deafness arising in disease of the corpora quadrigemina. In this the auditory symptoms are so late in appearing that they are of little diagnostic importance. The investigation of the "field of audition," in the sense of the percentage of hearing for tones of every pitch throughout the whole range, offers us some hope of a solution of the difficulty of localizing the morbid cause, and we have to rely on the methods introduced by Hartmann⁶⁹ and modified by Gradenigo.⁷⁰ It has, however, hitherto demanded an expenditure of time and trouble that only the most energetic and sanguine could devote to it, but I have devised a simple mechanical arrangement for shortening the process, and I hope to bring it forward for your approval on some future occasion.

Gentlemen, I think you will agree that I have stated and not solved problems. Perhaps I have stated too many. In any case, my hope is that among them all you can find some of sufficient interest to induce various Fellows of the Association to bring forward cases illustrating or elucidating them. I hope that anyone who is desirous of opening a discussion on any subject will, at the earliest possible opportunity, send in notice of his wish to the Council, so that they may make arrangements for giving the utmost effect to it.

As a Scotchman, it would be impossible for me to conclude my remarks without improving the occasion to the extent of giving you the good advice with which my countrymen are always so overflowing. There are two points in regard to discussion in which I hope to have your utmost support.

In many societies there is a tendency for the younger or more modest members to hesitate in bringing forward observations of cases, because

⁶⁷ Mackenzie, "*Brit. Med. Journ.*," March 16, 1895.

⁶⁸ Siebenmann, "*Ueber die Centrale Hohnbahn*," Wiesbaden, 1897.

⁶⁹ Hartmann, "*Deutsch. Med. Woch.*," 1885, No. 15.

⁷⁰ Gradenigo, "*Schwartz's Handbuch der Ohrenheilkunde*," Vol. II., p. 293.

they think they are not worthy of the attention of a society that calls itself learned. They are apt to avoid exposing themselves to the criticism of which they need have no fear if only their material is solid, however common it may be. They may dread the playful taps of the rhetorical shillelagh, or the sledge-hammer assurance of their own ineptitude; or, again, they may recoil from the result of having their juvenility thrown in their faces when their senior feels himself devoid of better argument; or, again, they may entertain a pious horror of starting the wearisome flow of verbosity from the lips of those around them. I venture to believe, however, that none of these elements are prominent to any extent in this Association.

Again, I would like to encourage all who have cases illustrating want of success, either in a slight or extreme degree, whether in relation to diagnosis or to treatment, to bring them forward without stint; and I trust that I may, in the name of the Fellows of this Association, assure them that no advantage will be taken of their frankness, but that all will loyally respect their confidence, and, far from pointing the dagger to the bared breast, will gratefully accept the lesson which their self-abnegation has prompted them to convey.

ON SUPPURATIVE MIDDLE EAR DISEASE AND ITS RELATION TO THE EXANTHEMATA.

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No one will dispute the statement that the study of suppurative middle ear disease is of the first importance to a healer of the sick, not merely because it may impair or destroy the hearing or menace the life of the individual, but from the fact that its frequency is so great that it falls to the lot of everyone in ordinary practice to meet with numbers of cases annually.

One would think this a sufficient reason in itself for giving the subject a prominent place in the medical curriculum, instead of relegating it to the insignificance in which it confessedly lies.

This is not the place, nor is it my function, to impeach or defend the present system of medical education and examination. But I may be allowed to say that the cause of the anomaly is that we are in a transition stage. Surgery in general has within the last few years experienced in anæsthetics and antiseptics the greatest revolution it has ever seen, or perhaps will ever see—a revolution whose magnitude we do not and

cannot yet appreciate. Otology has only within the last fifteen or twenty years freed itself from the reproach that ear diseases were of two kinds—those that got well with syringing, and those that were incurable.

Knowledge is always ahead of improvement, and therefore the fact is not surprising that in spite of its progress the subject is still trammelled by tradition. I am convinced that when the relative importance of the various branches of medicine and surgery come to be reconsidered in view of the advance and development of each, otology will be estimated at a much higher and juster value than at present. The deplorable neglect and indifference with which people so frequently regard otorrhœa, even in those who are near and dear to them, is, I believe, partly the proverbial contempt bred by familiarity, and partly a relic of the days when from want of knowing how to treat it no effort was made by doctors to check its progress.

It is the rule rather than the exception—at least among the poor—to hear a mother excuse the neglect of her child's incurable ear by saying "she thought it would grow out of it," or, "she was told it would be dangerous to stop the discharge." I regret to say the doctor is often quoted as having originated or confirmed this view. That qualified men are to be found capable of committing themselves to statements such as these is a satire on examinations. Ignorance such as this can only be combatted by the education of the profession and the enlightenment of the public.

The special branch of disease of the middle ear of which I now wish to speak is acute suppurative inflammation—its nature and treatment.

Let us first consider what happens when a patient for the first time gets a discharge from the middle ear. After exposure to cold, or during the progress of a sore throat, or in whatever way it happens, he first notices a slight but gradually increasing throbbing pain, and with it a sense of fulness deep-seated in the ear. The hearing power on that side becomes impaired, subjective noises are heard, and the severity of the symptoms increases until he is found to have a quickened pulse, a slightly furred tongue, and a temperature a degree or two above normal. The *membrana tympani*, if observed, will be seen to be dusky red in colour, convex outwards from pressure of fluid from within, the light reflex gone, and the handle of the malleus indistinct. These symptoms continue until, after a shorter or longer time, they are relieved by the bursting of the membrane and the appearance of a bloody serous fluid in the external auditory meatus. In a day or two this thin, watery discharge gives place to a thick, yellow, muco-purulent one; and so the process becomes established.

There is every reason to believe that, in the vast majority of cases, the inflammatory process makes its way by direct extension from the throat along the mucous membrane of the Eustachian tube, the narrowest part of which becomes blocked by the swelling. The fluid evoked by the irritation, deprived of any natural exit, is pent up in the drum until its pressure becomes sufficiently great to determine the rupture of the softened *membrana tympani* and initiate the discharge.

I think I am correct in saying that this is regarded by all writers on

the subject as a purulent process pure and simple, that the fluid is of a purulent nature *ab initio*, and that the right treatment is to perform paracentesis and relieve the patient by giving artificial exit to the offending liquid; and this was my own belief and practice for some years.

My former teacher, Prof. Gruber, describes the quality of the initial discharge as serous, bloody, purulent ("serös, blutig, eiterig"). My observations within the last few years have led me to the belief that purulent otitis, before rupture of the membrane and establishment of the discharge, is very rarely met with; and, therefore, that paracentesis as a routine treatment in these cases is unjustifiable; and one of the objects of this paper is to support this contention, as well as to try and throw some light on the earlier, and therefore seldomer observed, stages of the disease.

Some years ago, when the subject first engaged my attention, I followed the classical treatment, and found, in common, I suppose, with other people, that in some few cases the ear discharged a small quantity of this bloody serous fluid for a day or two and then dried up. In others, the serous discharge gave place after two or three days to the yellow muco-purulent one, which persisted for weeks before it could be made to stop; while in a few cases a chronic discharge was set up which lasted indefinitely. Among these one or two occurred which shook my belief in paracentesis. In one case a very severe otitis media, conforming in every respect to type, was caused by a jump into water from a height. The concussion was very severe, and was followed directly by otitis. After the process had been established some seven days the membrane was incised, and the usual train of events followed. First, sero-sanguineous discharge, and, in a couple of days, pus, which, under antiseptic treatment and drainage, ceased in about three weeks, the hearing returning to normal in a couple of months. Here, unlike inflammations extending from the throat, there could have been no micro-organisms introduced into the tympanum, and one might reasonably have expected that the local inflammation of a moderate mechanical stimulus would terminate without suppuration.

The question then presented itself, why did this case suppurate? There were two possibilities—either there might have been before the accident, lying quiescent in the drum, pyogenic organisms which only needed the opportunity afforded them by the injury to infect the mucous membrane; or the drum had been aseptic to start with, and the serous discharge had become accidentally contaminated from without. This latter theory seemed by far the most likely, and the suspicion then arose: could it be possible that some or all of the other cases met with were aseptic ones, which, if let alone, might never have discharged at all—where suppuration supervened accidentally either through some fault in the antiseptics at the time of puncture, or subsequently by infection of the serous discharge through inadvertence on the part of the patient? I do not now say I believe in the truth of this theory put in so many words, but at the time it seemed plausible, and it led me to the opinion which I still hold that the serous fluid in the drum ought not to be regarded or treated as purulent, but looked upon as a simple, or perhaps conservative,

exudation provoked by a severe irritation. There then seemed a possibility that sedative treatment might allay this irritation, and, by causing the fluid to become absorbed, obviate rupture of the membrane and suppuration.

In order to test the truth of this supposition I treated some cases as follows :—I first ordered a saline purge, and with the object of relieving the pain applied one of the ovoids recommended by Gruber for furuncle of the external meatus. These are small torpedo-shaped masses of jelly weighing about four grains, having for their basis a mixture of gelato-glycerine and water in such proportions that they remain gelatinous at ordinary temperatures for an indefinite time while melting at the body temperature. The proportion of water is so balanced that they tend neither to dry nor deliquesce. Before they are cast a quantity of *ext. opii. liq.* is added to and dissolved in the melted gelato-glycerine, so that each ovoid when moulded contains one-sixth of a grain of the extract. One of these was put in the affected ear and the meatus plugged with a pledget of cotton wool. The patient was directed to lie on the opposite side for some hours, or as long as he conveniently could. The ovoid melted and bathed the tympanic membrane, giving the drug an opportunity of exercising its influence. By getting the patient to sleep on the opposite side the treatment could be continued all night as well as a great part of the day.

This treatment was followed by the effect hoped for. The pain was relieved, the throbbing and noises ceased, and after some days the process subsided, the fluid becoming gradually absorbed and the hearing restored. In this way I treated acute otitis of every severity and from a variety of causes, including acute cold, traumatism, and plugging of the posterior nares for hæmorrhage. One case, due to the last-named cause, deserves special mention. It was a case of mucous polypi, associated with purulent rhinitis and empyema of the ethmoidal sinuses, in which severe hæmorrhage necessitated plugging. While the plugs were being fixed the patient felt fluid being forced into his ear, which shortly afterwards inflamed severely. Even in this case, as in all others where the patient was not the subject of an exanthem and presented himself at the beginning of the attack, the method did not fail.

This line of treatment had the following advantages :—When it succeeded the patient was delivered from the dangers attendant on suppuration, and the pain was relieved as completely as by incision. Again, when it failed, and the membrane burst, as it sometimes, though rarely, did, when the patient delayed presenting himself until late in the attack, he was no worse off than he would have been with paracentesis, for a ruptured drum can be made to heal as perfectly as an incised one, and the hearing to recover as completely.

Although it is true that the sero-sanguineous fluid in question will avail itself of the opportunity to degenerate into pus, nevertheless the fact that it can by suitable treatment be made to resolve itself is to me proof that it is not purulent in the ordinary acceptance of the term.

But it must not be taken as my contention that it is of a strictly aseptic nature, for I readily admit that it is generally evoked by a bacterial irritation by extension of an inflammatory process along the Eustachian

tube from the throat. The question then arises, What is the precise part played by bacteria in this disease?

If the fluid when it first flows be examined microscopically there will be found a few leucocytes, some epidermal and epithelial *débris*, and a few, but very few, bacteria. If the discharge be examined a few hours later, the organisms which were at first counted by units will now be numbered by thousands. At the end of a day or two the discharge will appear to consist of nothing but bacteria, and this state continues until the pus proper makes its appearance. This series of events always takes place no matter whether the membrane ruptures or is incised; and, if the latter, whether done early or late in the course of an attack, which may last as long as a fortnight. In other words, as long as the membrane remains intact, the condition of the fluid remains unchanged or without visible change, and the bacteria in the drum are prevented from, or at least enormously retarded in, developing. But when once the fluid gains access to the meatus, the causes which prevented the multiplication of the bacteria cease to exist. This shows clearly that the date of the formation of pus is determined only by the time of incision or bursting of the membrane, and is therefore independent of the length of time the otitis has been established, which could not be the case unless the fluid retarded the growth of the bacteria.

How comes it, then, that bacteria may lie indefinitely in a nutritive fluid at the most favourable temperature and yet show so little disposition to develop? Though this question is more readily asked than answered, it is easy to see that it is only a particular case of the general rule that the body when invaded by bacteria does not allow itself to be consumed by them like gelatine in a test tube, but exercises in one way or another a restraining or inhibitory influence on the vitality of the microbe, with the object of its destruction—an object which it often succeeds and sometimes fails in attaining. This explanation is, after all, at best little more than a paraphrase of the question, but we are not so much concerned here with the explanation as with the fact. We are compelled, therefore, to regard the fluid as it lies behind the intact membrane as part and parcel of the living body, as in itself endowed with life—as, in a word, like the blood of a fluid tissue having for its special function the termination of bacterial invasion by the destruction of the invaders.

The fluid in the drum, therefore, is an evidence of the fight going on between the man and the microbe. The victory belongs to the man when the inflammation subsides without discharge, and to the microbe when the discharge is established; and though possibly the tide of battle may be turned, and the issue of the struggle decided in favour of the microbe, before rupture actually takes place, the interval, if any, must for every reason be a short one—too short, even if determinable, to allow of surgical interference. The fact is thus explained that pus is not of necessity formed in an ear when attacked by micro-organisms, whatever the exciting cause of that attack may be, and justifies the attempt to prevent that issue by coming to nature's aid and assisting her to ward off, rather than by untimely interference to precipitate, what must be regarded as a calamity.

I was desirous of seeing how far the otitis of the eruptive fevers con-

formed to the type of ordinary acute otitis, as there was no *a priori* reason why they should not be identical. I thought it possible that timely treatment might mitigate the ravages it notoriously makes, especially among the children of the poorer classes. With this object, in October, 1896, I began to investigate the cases admitted into the Hardwicke (Fever) Hospital. For their kind permission to observe the patients under their charge, and for facilitating the work in every way, I am indebted to my colleagues, Drs. O'Carroll and Coleman, and my late lamented colleague, Dr. G. P. Nugent.

It was obvious that unless one knew what happened when cases were left alone, it would be impossible to estimate the effect of treatment; and it was quite clear, too, that there would be little use taking one or two cases, which might or might not be typical, and generalizing from them. It was therefore decided to take a series of at least one hundred cases and carefully observe how they behaved while leaving them entirely untreated. Then by taking a similar number of other cases and treating them by different methods, that method adopted in the treatment of the ordinary acute case might be improved upon; and, finally, by applying this improved method to a third series, its approximate value might be learned by comparing its results with those of the first series, and this was the plan followed.

The wards were visited daily, including Sundays, from October 5th, 1896, to March 5th, 1897. Daily observations were taken to the number of about 6,000, and a daily record made of the condition of each in each case. Two interruptions only occurred—once for two days at Christmas and once for two days from indisposition.

In the first or observation series, the progress of the case, so far as the ears were concerned, was not interfered with unless discharge supervened.

In the second series experiments were made with ovoids, impregnated with various drugs, in order to find out whether, and, if so, to what extent, the progress of otitis was influenced by their application; and in the third series the treatment considered best in the second was systematically applied to every ear which inflamed.

The method of observation was as follows:—A 12-volt electric lamp, carried in a handle identical in pattern with that used in Caspar's urethroscope, and fed by a small accumulator, was carried about from patient to patient. This apparatus, by means of a right-angled prism with a reflecting surface, sent a beam of light out at right angles to its shaft, and this was used to illuminate a silver speculum of the Gruber type. By thus dispensing with daylight and reflectors, it was possible to examine the patients' ears as they lay in bed by simply getting them to turn over on to the side first examined. This was a most important advantage, for it enabled one to examine patients, even when very sick, without the least disturbance, which would have been quite impossible by reflected light. The method had also the secondary, but still important, advantage of greatly economizing time.

In purulent cases the specula, after having been used, were sterilized by boiling, so as to obviate the risk of grafting the bacteria of one case on to another.

The observations lasted on an average over a fortnight—sometimes more and sometimes less, according to the nature and progress of the case. The name, age, sex, and disease of each patient were entered in a book, and a daily note made of the condition of each ear and the treatment (if any) adopted.

In each series the patients were taken without any selection in the order of their admission to hospital. There was no perceptible change in the virulence of the epidemic during the time covered by the observations. The diseases from which they suffered were almost exclusively measles and scarlatina, but no distinction was made as far as observation or treatment was concerned between one disease and the other.

In the first or observation class it was seen that the severity of the inflammation in different cases was most variable, both as to the degree reached and the rapidity of its onset.

The time, too, at which the inflammation appeared was most variable, and did not seem to bear any constant relation to any stage of the disease. As a general rule, the more severe the attack, and the worse nourished and dirtier the patient on admission, the more severe and rapid was the inflammation, though well-marked exceptions to this rule were not infrequent. The existence of enlarged tonsils and post-nasal adenoids seemed, as far as measles was concerned, to have more to say to the probability of ear complication than the severity of the disease. In scarlatina, however, not only the tendency to otitis, but the severity of the attack, were largely dominated by the presence of post-nasal growths and enlarged tonsils.

The severity varied from a few hæmorrhagic spots on the membrane, or a scarcely recognizable erythema in the neighbourhood of the handle of the mallens, without any other pathological change, to the most intense livid injection, with bulging of the membrane, loss of light reflex, etc. The rapidity varied from cases in which the formation and discharge of the fluid occurred within twenty-four hours—the membrana tympani having been to all appearance normal the day before—to those in which a scarcely perceptible daily increase in the physical signs took ten or twelve days to culminate in rupture; while in others (and these were to me the most interesting) the process, even though severe, subsided without any discharge. In this untreated class I have seen severe inflammation, with bulging of the membrane and rupture apparently imminent, last for as many as eight days, and then subside as it began. And this was by no means exceptional, for of the total number of ears which inflamed in this class over forty per cent. terminated in this way, without, as I have already said, any treatment whatever.

The reading of this was easy. Cases where the rupture of the membrane took place within a few hours were those in which, whether on account of the patient's inability to resist the bacterial invasion, the expression of his ill-health, or from special virulence of the microbe, the fight resulted in an easy victory for the invader. Again, where the inflammation lasted a week or ten days the contending forces were nearly equal, and the issue was determined either by accidental circumstances or the gradual gaining of ground by one or other side; while cases where a

short attack was accompanied by slight inflammation were those where the vital forces of the body were superior to those of the bacteria.

These cases of every kind differed from the ordinary acute otitis in one important respect, and in one only—viz., absence of pain. No matter how severe the objective signs, it was the very rarest thing to hear either child or adult complain of pain or acknowledge its existence.

Here, then, was a very important fact. Of the total number of middle ears which inflamed, over forty per cent. recovered after a variable time, absolutely and completely, without rupture of the membrane. Obviously there must have been a considerable number on the border line. Some of those who recovered needed only that the attack should have lasted a little longer, or have been a little more severe, or their power of resistance should have been a little less in order, that discharge should have been established; and, conversely, some of those in whom discharge appeared might, with a trifling alteration in their condition—a straw, perhaps, in the balance—have been saved from a purulent ear and its risks.

It was interesting to see whether this latter effect could be compassed. There was but one way of deciding the question, and that was of statistics. For it would have been quite useless to apply any treatment to a single ear, or any small number of ears, and generalize from the results observed; because a case that recovered might have been either lauded as a cure or stigmatized as a recovery in spite of the treatment, according as the critic was favourable or hostile. The more cases, therefore, the more reliable were the results likely to be; and for this reason I am sorry the number is not greater, but the demands on my time from other sources were too great to permit my going into the subject more exhaustively then. I may, perhaps, hope, however, that someone else will be sufficiently interested in the results to supplement my feeble efforts, and give the subject some of the attention it undoubtedly deserves.

The drugs which appeared the most likely to do good were three, viz., opium, belladonna, and cocaine. After some trial in the second class, I concluded that each of these had a sedative effect of its own, and in the end adopted an ovoid containing—

Ext. opii liq.....gr. $\frac{1}{4}$
CocaineH.L.L.
Atropine sulph.āā gr. $\frac{1}{4}$

and this was exclusively used in the third class of case. Before adopting this, I inquired of the Professor of *Materia Medica* in this University, Dr. Walter Smith, and Prof. Whitla, of Belfast, about the possibility of antagonism between the opium and atropine, but they agreed in saying that the fact of their having different actions on the pupil was no reason why their local sedative effect, when combined, should not be the sum of the sedative effects of each.

The ovoids were prepared by me as follows :—Gelato-glycerine was the basis used. It was so made that, while remaining gelatinous at ordinary temperatures, it melted as the temperature of the body was approached, *i.e.*, between 90° and 95° Fahr. The proportion of glycerine to water was three to one. The gelato-glycerine was, therefore, not liable either to dry or deliquesce, as might happen if too much or too little water were used.

Aseptic precautions were taken in their manufacture, not because there was ever the least tendency to decomposition—the large proportion of glycerine preventing that—but in order to avoid the possibility of infection through using unsterile material. I have lately thought it advisable to add two per cent. of creolin as a safeguard against accidental contamination, as well as to try and render the meatus aseptic, so that if discharge supervened no additional organisms might be grafted on from epidermis in that locality.

When an ear was observed to begin to inflame, one of these ovoids was put in, and the patient directed to lie for two or three hours on the opposite side, so as to allow the pellet, when melted, to lie on the tympanum. In a severe case two ovoids were put in—one in the morning and the other at night.

In this way the inflamed ears of the third series were treated.

Let us now compare the results of the three classes.

In the first or observation class the number of cases was 121—measles 65, scarlatina 56, or 242 ears. Out of these 242 there was distinct and undoubted inflammation in 84, and of these 84 inflamed ears, 49 discharged, while the remaining 35 recovered without discharge, simply having been left alone.

Discharge therefore followed in this untreated class in 58 per cent. of those ears which inflamed, being 20 per cent. of the total number of ears observed.

The second or experimental class included 97 patients (measles 10, scarlatina 87), or 194 ears. Of these 194, 47 inflamed, and in 18 cases inflammation was followed by discharge.

Pus therefore followed in 38 per cent. of the inflamed ears, being 9 per cent. of the total number observed.

In the third series 101 patients (measles 57, scarlatina 44) were included, being 200 ears. Of these 200, 49 inflamed, the inflammation, notwithstanding the treatment, being followed by discharge in 16 ears, being 32 per cent. of the inflamed ears, and 8 per cent. of the total number observed.

It must be stated that these sixteen purulent ears included five to which, owing to accidental circumstances, no treatment whatever had been applied; and if, as might be fairly done, some of those were eliminated, the total would be still further reduced; but, even including them, the percentage is sufficiently below that of the observation class to prove that the treatment was of service.

Taking the cases all round, surprise may perhaps be felt at the large number of ears which discharged; but it must first be remembered that the epidemic was a severe one, and, secondly, that the patients were recruited from one of the poorest districts in Dublin—many of them from the workhouses—the children being, with few exceptions, badly nourished and not well cared for. But these were factors which influenced each class alike. Many of these children were badly trained and difficult to manage, and this often made it hard to get them to lie for a sufficient time on one side to give the treatment a fair chance.

Though in the large majority of cases there was no room for doubt as

to whether an ear was inflamed, yet instances occurred where one could not definitely say whether the term "inflammation" could be applied or not. In such cases a note of interrogation, or some other doubtful sign, was recorded, and unless the following day or two showed a distinct increase the case was not regarded or recorded as inflammatory. The gradations from the normal ear to one on the point of rupture were imperceptible, and proved conclusively, to my mind, that no hard-and-fast line can from the symptoms be drawn between myringitis, non-suppurative otitis, and suppurative otitis, the difference between these latter two being, as my contention is, purely a question of rupture of the membrane. Myringitis and otitis, therefore, though useful clinical terms, ought not to be interpreted as meaning anything pathologically different in kind, but merely a difference of degree.

When the otitis ran a slow course the formation of the perforation, when it occurred, could be easily seen. I have observed it behind and below the tip of the handle of the malleus oftener than elsewhere. When the intratympanic pressure becomes too great a spot is formed by the membrane becoming paler than the rest, and apparently by an anæmic necrosis the patch softens and finally gives way.

There is a reason why this point should be more frequently chosen than any other as the seat of rupture. When a membrane becomes stretched by pressure of a fluid, its ability to resist the pressure depends not only on its intrinsic strength, but also on the curve it assumes under pressure; the shorter its radius, or, as the case may be, radii, of curvature, the greater the pressure required to burst it. Thus, if we have two hollow spheres, made of the same thickness and of the same material, but with unequal diameters, and if they be subjected to the same increasing pressure from within, it will always be found that the larger sphere will be the first to rupture. And similarly, if a uniform membrane have a surface such that the curvatures at various points are various, it will be found that pressure will burst it where the radii of curvature are greatest. In a distended tympanum this point is situated behind and a little below the handle of the malleus. I shall not go more fully into this point, but refer anyone interested to a paper read by me before the Royal Academy of Medicine in Ireland, and which will be found in its "Transactions," Vol. X., and in the "Journal of Anatomy and Physiology," Vol. XXVI.

It follows, therefore, that when the drum bursts, as a consequence of mere pressure, this will always be the point selected; and it follows also, if the rupture occurs at any other point, that there must have been some other weakening factor at work in that locality. That such factors exist is obvious from the consideration that even when this weak point gives way the damage does not always stop there, but in some instances involves other parts of the membrane. Very large perforations and destruction of the membrane are instances of this; but in my experience, as I shall mention later on, they never occur in a protracted case.

Microscopic specimens were taken from many of the cases at intervals after the discharge first appeared, and some important facts observed. The matter obtained on the first day of discharge stained with difficulty,

and showed little except some epidermal or epithelial *débris*, with here and there a micro-organism. In some, none were found. In the specimens taken the second day were usually found countless thousands of bacteria that with difficulty could be discovered twenty-four hours before. On the third day, or in some instances not until the fourth, pus cells were to be seen in abundance. The microbe observed in most instances was a diplococcus. The date of the appearance of the pus cells in quantity was always approximately the same, and seemed as in acute otitis to have no relation to the length of time the process lasted before rupture. In many cases where the meatus was kept free from contamination by other bacteria, this diplococcus was alone seen, being, in fact, in pure culture.

A comparison made between any of these and pus from a chronic suppurative case which had originated during an exanthem established the contrast that, whereas in the acute condition there are rarely bacteria of more than one kind present in quantity, in the chronic there are to be seen several—notably bacilli spirilla, staphylococci, and streptococci—none of which are proper to the acute condition. This at once raises the suspicion that one or more of these latter forms gained entrance to the tympanum through want of proper precautions during the acute attack, and, having established themselves there, kept up the flow of pus indefinitely, the bacterium which started the otitis having worn itself out. It required but little consideration to show the likelihood of this, for the discharge acts as an excellent culture-ground, providing moisture and pabulum at the ideal temperature for growth and reproduction, and furnishes a track from the point of infection back to the tympanum, along which the microbes can extend at their leisure.

From what I have observed I have no doubt that this is what happens, and that it requires in an ordinary case little more than elementary cleanliness in order, by preventing this epi-infection, to insure that the inflammation may subside and the membrane heal in a few weeks, leaving the patient little, if any, the worse either in health or hearing.

This is a point of the very first importance; for, to say nothing of the damage to the hearing power which invariably takes place, it is precisely in these chronic cases that intracranial complications arise, and the number of deaths due to this cause is very much greater than would appear by the Registrar-General's returns.

From the foregoing it will be seen how important it is to be careful in cleansing instruments that are brought into touch with the ear. A speculum or probe once used in a chronic case may, as the bee carries pollen, be the means of grafting on to an acute case the microbe destined to convert it into a chronic one. The use of a speculum, unless recently submitted to a reliable cleansing process, is as great a surgical crime as the use of a dirty knife. Sterilization by boiling is so simple, so effectual, and so cheap, that it should be used by everyone who examines an ear, and its general adoption would incidentally get rid of that abomination the vulcanite speculum.

The plan of treatment adopted with a view to healing the discharge was the following:—On admission of the patient to hospital the external meatus was cleared of cerumen and epidermis by syringing with 1 in 60

carbolic lotion, for the double purpose of observation and cleansing the epidermis of any microbes that might be lying in its superficial layers.

When the discharge showed itself the ear was again syringed, and the syringing repeated as often as the discharge became visible. After each syringing the ear was carefully dried with clean cotton wool and the meatus filled with a powder composed of boric acid, to which 5 per cent. of loletin had been added. This had for its object the prevention of accidental contamination from outside, either by dust falling on the ear or the more likely way of the patient picking the ear with a dirty finger. I do not suppose that this powder is any better than many others that might be thought of, but at any rate it is good enough for the purpose. When the powder began to be washed away by the discharge the syringe was again used and the process repeated. This procedure was adopted as often as necessary until the discharge ceased. This generally happened in about three weeks, but some cases healed inside eight days and others not for five weeks.

The microscopic specimens taken from cases where the discharge was recent nearly all contained macerated epidermis from the external meatus, and in some of these specimens there were to be seen lying between the scales of this epidermis cocci, apparently staphylococci, quite different in character from those to be found in the discharge. The relation of the staphylococci to the cells of the epidermis convinced one that they lay there before the discharge set in, and were detached from the meatus through the accident of maceration. This shows the importance of the disinfection of the external ear in such cases. I should, therefore, recommend that when measles or scarlatina has been diagnosed, the precaution should be taken of disinfecting each meatus by allowing some unirritating fluid antiseptic to soak into and macerate the skin for an hour or two, the patient being kept lying on the opposite side during the process. Such a procedure involves no technical knowledge, and could easily be performed by the nurse or anyone in charge. In fever hospitals a stock solution could be kept for the purpose, and used as a matter of routine. The following formula should answer the purpose very well:—

Aqueous sol. corrosive sublimate (1 in 1000).....	10 parts.
Glycerine	1 part.

The only cases in which destruction of the tympanic membrane took place were the very rapid ones, where there was no time for observation between the onset of the attack and rupture of the drum—where the ear was, to all appearances, normal one day and discharging the next. The other cases, viz., those in which rupture only took place after the inflammation had been some days established, healed without leaving the drum perforated. This tends to prove, in the first place, that the cases where paracentesis might be of some avail in preventing destruction, are too rapid to give an opportunity for its performance; and, in the second, that wherever the opportunity is given, it is better left undone, for the healing of the perforation demonstrates its futility, while the subsidence of the inflammation without rupture shows it would have been wrong.

It will be observed that I only impeach paracentesis as a *routine*

treatment in ordinary acute otitis media. I cannot yet assume the responsibility of defining within strict limits the cases, if any, in which the operation is called for. Further experience and observation will probably render this possible, but I am strongly of opinion that in the large majority of cases where paracentesis is performed it is not merely unnecessary, but distinctly wrong.

I quite anticipate that these opinions will be freely challenged. Paracentesis as a routine treatment has, since its first introduction, so far as I am aware, never been questioned, but, on the contrary, is by every authority advocated and practised—so much so that there can be but few otologists who have ever allowed themselves to stand by and observe how a case would behave without puncture.

I feel I have only touched the border of a vast and important territory. The cases that have come within the scope of my observation are not numerous enough nor is their variety sufficiently great, even if the arguments were without flaw, to justify one in claiming that the contentions are beyond question or criticism, though I should be without apology here to-night if I were not a devout believer in the truth of the opinions to which I have given expression.

The results are, at any rate, sufficiently encouraging to induce me to hope that further investigation in this field may lead to more perfect treatment through fuller and more perfect understanding of the laws that govern acute otitis media.

RETROSPECT OF THE YEAR 1897.

NOSE AND NASO-PHARYNX.

BY W. MILLIGAN, M.D.

[In the following résumé the references are to THE JOURNAL OF LARYNGOLOGY, where references to the original articles will be found.]

Diseases of the nose and naso-pharynx have, during the past year, received a very considerable share of attention at the hands of a large number of workers both here and abroad. Considerable progress has been made not only in the investigation of certain obscure forms of disease, but also in methods of treatment. Among important works which have appeared during the year we may mention: Lermoyez's "Traitement des Maladies des Fosses Nasales, des Sinus de la Face, et du Pharynx Nasal" (Paris, 1896); Heymann's "Handbuch der Laryngologie und Rhinologie" (Wien, 1896); Moure's "La Coryza Atrophique et Hypertrophique" (Paris, 1897); Seth Bishop's "Diseases of the Ear, Nose, Throat, and their Accessory Cavities" (F. A. Davis & Co., Chicago); Lautmann's "Atrophic Ozena: Clinique, Pathogeny, and Serumtherapy" (Paris, 1897); Bosworth's "Text-Book of Diseases of the Nose and Throat," Vol. I. (London, 1897); and J. B. Ball's "Handbook of Disease of the Nose and Pharynx," Third Edition (London, 1897).

Various new instruments have been devised for the treatment of certain nasal conditions, among which we may mention Délie's nasal gouge for the removal of spurs ("J. of L.," Feb., 1897, p. 104); Courtade's forceps for the removal of adenoid vegetations ("J. of L.," Mar., 1897, p. 120); Mink's Choanal Forceps ("J. of L.," Oct., 1897, p. 570); and Hubbard's nasal snare ("Med. Rec.," 1897, Vol. LI., p. 683).

A useful nasal spray made of celluloid has also been devised by Woodruff of Manchester.

The treatment of enlargement of the inferior turbinals has received a large share of attention, but the views upon the amount which should be removed in cases of nasal stenosis vary widely. R. Lake ("J. of L.," April, 1897, p. 233) advocates the removal of the anterior end of the inferior turbinal as an alternative to turbinectomy. He performs the operation under cocaine by means of a strong pair of artery forceps, punch forceps, scissors, or snare.

Dundas Grant ("J. of L.," May, 1897, p. 243) also advocates anterior turbinectomy. He makes an oblique incision by means of a strong pair of scissors, upwards and backwards along the attachment of the turbinated body, and removes the peninsula thus formed by means of a cold wire snare. This method of procedure he advises, if only as a preliminary to a subsequent posterior operation ("J. of L.," July, 1897, p. 368).

Delavan ("J. of L.," Aug., 1897, p. 439) advocates the method of sub-mucous incision in certain cases of enlargement of the inferior turbinated body, and claims good results.

At a discussion during the meeting of the British Medical Association in Montreal ("J. of L.," Oct., 1897, p. 616), Greville Macdonald remarked that although it was frequently necessary to remove hypertrophied portions of the mucous membrane from anterior or posterior ends of the inferior turbinal, he had never yet seen a case where one could dream of attaining anything by total ablation of this important structure.

In the discussion which followed the general trend of opinion seemed to be that the duty of the surgeon was to preserve as much of the original structure as possible, removing such portions only as were clearly hypertrophied and giving rise to troublesome symptoms.

The treatment of adenoid vegetations has also come in for a considerable share of attention, and although nothing specially new has been added, the views of various observers have been published, and some interesting facts elicited.

Sendziak ("J. of L.," April, 1897, p. 173) calls attention to the fact that in deaf-and-dumb children we meet more frequently with adenoid vegetations than we do in healthy children. In such cases he strongly recommends operation, not only on account of the general improvement which follows their removal, but also because the subsequent teaching of the deaf mute is thereby rendered easier.

Greville Macdonald ("J. of L.," June, 1897, p. 307), in opening a discussion upon the treatment of post-nasal adenoids, remarks that the actual quantity of hypertrophy present affords no indication of the necessity for operation. The necessity for operation depends not upon

the quantity of growth present, but upon the mischief the growth is doing.

Milligan ("J. of L.," June, 1897), in discussing the same subject, remarks upon the advisability, if not the necessity, of complete removal of adenoid growths in cases of middle ear disease. Not only is their removal indicated in dry catarrh of the middle ear, but also in cases where suppurative disease is or has been present.

The question of the tubercular or non-tubercular nature of adenoid growths has been investigated by several observers. Goure ("J. of L.," June, 1897, p. 339) has come to the conclusion that adenoids are rarely tuberculous.

MacBride and Turner ("J. of L.," July, 1897, p. 393), in specimens removed from one hundred patients, and examined for evidences of tubercle, found that three per cent. of the growths were tuberculous. The influence of adenoid vegetations upon the growth and configuration of the upper maxilla and the nasal septum has been carefully investigated by Gleitsmann ("J. of L.," July, 1897, p. 357), who strongly advises the early removal of all vegetations in order to avoid as far as possible such secondary deformities.

The vexed question as to whether adenoids should be removed with or without narcosis has given rise to a considerable amount of discussion.

Lange ("J. of L.," July, 1897, p. 392) strongly urges the employment of chloroform in preference to all other anæsthetics. This opinion is shared by Lenzmann ("J. of L.," Dec., 1897, p. 697). Naegeli, on the other hand, favours the operation being performed without narcosis of any sort ("J. of L.," Dec., 1897, p. 698). The recurrence or non-recurrence of adenoids after operation has also been the subject of considerable discussion, many authorities believing that recurrences are much more prone to occur when the operation is done without an anæsthetic having been administered.

A few cases of rhinitis caseosa have been described, and the presence of streptothrix alba has been insisted upon as pathognomonic. W. Hill ("J. of L.," May, 1897, p. 249) has recorded an interesting case of rhinolith complicated with rhinitis caseosa. Several cases of rhinolith have also been recorded by other observers, notably cases by P. MacBride ("J. of L.," Feb., 1897, p. 66) and F. Marsh ("J. of L.," April, 1897, p. 189).

The treatment of atrophic rhinitis has during the past year received a very large share of attention, but unfortunately the methods of treatment at present employed do not appear to be any very great improvement upon those which have been in use for many years past.

The value of cupric electrolysis has, however, been highly praised by many authorities, several regarding it as almost a specific remedy.

Rethi ("J. of L.," May, 1897, p. 283), who has made use of this treatment to a very large extent, considers it a most valuable method.

Moure ("J. of L.," Sept., 1897 p. 498) claims for its use thirty per cent. of cures, whereas Hennebert ("J. of L.," Oct., 1897, p. 551), after having carefully treated seven patients (all nasal washes having been forbidden), remarks that in not a single instance has he seen a cure.

Hughes ("J. of L.," Dec., 1897, p. 696), after having treated seventeen patients, obtained the following results:—Three cases, under the age of thirty, were cured; two cases, under the age of twenty, were probably cured; six were distinctly benefited; and the rest remained either stationary or received no benefit at all.

The value of oxygen inhalation has been highly praised by Stoker, whilst Scheppegegrell ("J. of L.," July, 1897, p. 366) insists upon the value of ozone inhalations.

The antitoxin treatment of atrophic rhinitis is claimed by certain observers to be the best method of treatment known at the present day.

Compaired ("J. of L.," July, 1897, p. 387) remarks that, after two or three injections of from four to six cubic centimètres, the odour disappears, while a marked diminution of crust formation is perceptible.

Molinié ("J. of L.," July, 1897, p. 395) records three cases cured by injections of Roux's serum, whilst Helme ("J. of L.," Sept., 1897, p. 498) considers the serum treatment of ozæna to be useless.

Gradenigo ("J. of L.," August, 1897, p. 464) has seen benefit arise from intramuscular injections of iodine.

The interesting question as to whether cases of atrophic rhinitis are, in some cases, the cause, or, in other cases, the result, of diseases of the accessory nasal sinuses, has been discussed by Harris ("J. of L.," Nov., 1897, p. 636), who has come to the following conclusions:—(1) That there is no single constant cause of ozæna, and that ozæna is rightly to be regarded as only a symptom. (2) That genuine atrophy—until recently unproved—in all probability does exist. (3) That focal disease (including, especially, disease of the accessory sinuses), while not the only cause, is a very important and common cause. (4) That each case of ozæna, in addition to being treated with the proper constitutional and local measures, is to be thoroughly and repeatedly examined for evidence of sinus disease.

The diagnosis and treatment of diseases of the nasal accessory sinuses has proved an interesting study to many observers, and a very large number of cases have been recorded. The great importance of free drainage has been rightly insisted upon, and the best methods of attaining this end have formed the subject of much discussion. Suppurative disease of the frontal sinuses has perhaps engaged the largest share of attention, and several new methods of technique have been described. All observers appear to agree upon the urgent necessity of securing free fronto-nasal drainage.

Bryan ("J. of L.," Aug., 1897, p. 436), in an interesting article, refers to the importance of the relation of the fronto-ethmoidal cells to the frontal sinuses and to the anterior ethmoidal cells. He considers that many cases of frontal sinus suppuration are due in reality to propagation of disease from the maxillary sinus, owing in some instances at least to an abnormal communication between the two cavities, and *vice versa*.

Mayo Collier ("J. of L.," Aug., 1897, p. 463) considers the intranasal treatment of frontal sinus suppuration to be out of the question. He advocates the opening of the sinus from the front by means of a median incision.

Several cases of intracranial mischief secondary to frontal sinus

suppuration have been recorded—notably by Botey ("J. of L.," Feb., 1897, p. 78), Blessig ("J. of L.," Oct., 1897, p. 568), Forestier ("J. of L.," Dec., 1897, p. 695), and Rafin ("J. of L.," Dec., 1897, p. 698).

Hebinger's method of extirpation of the pituitary membrane after having opened the sinus is warmly advocated by Febleizen ("J. of L.," Sept., 1897, p. 520), while many others advocate the employment of the Ogston-Luc method of opening and draining the sinus.

The employment of antistreptococcic serum has not been neglected in cases of sinus suppuration. Boucheron ("J. of L.," Mar., 1897, p. 121) says that suppuration yields rapidly to this method of treatment when due to pure streptococcic infection.

Nothing specially new has been added with regard to the treatment of maxillary antrum suppuration. An interesting case occurring in a child eight weeks old has, however, been recorded by D'Arcy Power ("J. of L.," Nov., 1897, p. 644).

Cases of new growths within the nose have been recorded by many observers, notably a case of papilloma of the nasal septum, by Logan Turner ("J. of L.," Feb., 1897, p. 66), occurring in a male aged fifty-two. The growth—a cauliflower-like mass—measured six and a half inches in circumference, and was removed with complete success.

An interesting instance of a nasal fibroma has been recorded by Jobson Horne occurring in a female aged seventy.

For the removal of the posterior ends of the inferior turbinals Hellot ("J. of L.," April, 1897, p. 216) advises the employment of electrolysis.

LARYNX.

BY JOHN MACINTYRE, M.B., F.R.S.E.

During the past year a great deal of attention has been paid to affections of the larynx. New methods and new instruments have been placed before the profession, and, if there has been nothing very sensational in any particular department, many of the more recent improvements in surgery have been subjected to serious criticism, resulting in a better understanding of the value to be attached to each.

During the past year two successful congresses have been held. The British Medical Association held its annual meeting at Montreal in August, while the International Medical Congress was held at Moscow in the same month. In each of these a section for the study of the larynx was organized. The president at the Montreal meeting was Dr. Greville Macdonald, of London, and at Moscow the president was Prof. E. M. Stepenoff. Reports of these congresses have been or will shortly be published in these pages.

TUMOURS OF THE LARYNX.—The attention of the profession has of late been more than ever directed towards the great question of the best method of operation in neoplasms of the larynx. As pointed out in the October number of the JOURNAL OF LARYNGOLOGY, one of the most valuable contributions ever placed before the profession was published

during the year by Dr. Sendziak, of Warsaw (X., p. 584). Sir Felix Semon has likewise contributed a most valuable article and criticism on this subject ("Archiv für Laryng. u. Rhin.," Fraenkel, Sech. Band, Heft 3). As we pointed out in the review of these works, each ably defends his method. Whether viewed from the etiological, pathological, and, above all, from the operative standpoint, readers will agree in adding their testimony to the great practical value of these two works. Generally speaking, Sendziak pleads for early diagnosis, and this, with unilateral extirpation, offers the best chance. Early diagnosis and thyrotomy, as is now generally held by the English laryngologists, is advocated by Semon. His interpretation of the statistics of laryngotomy is exceedingly valuable.

Dr. Botey, of Barcelona ("First Spanish Congress of Otolology, Rhinology," etc., "Brit. Journ. Laryng.," Feb., p. 75), concludes that the more rational method of treating laryngeal cancer is that of laryngo-fissure; he supports Semon's opinion. Important contributions on cancer of the larynx are reported from the discussions at the International Medical Congress, Moscow, by Chiari, Krause, Hajek, Spengler, Castex, Rosenberg, Heryng, Wiel, Gleitsmann ("Journ. of Laryng.," Nov., No. 11). The subject has been treated from nearly every standpoint, the general impression being that the greatest advances have been made of late in the methods of treatment. Fraenkel has reported ("Archiv für Laryng. u. Rhin.," Band VI., Heft 2) an interesting series of nine cases of cancer of the larynx, in which he advocates the intralaryngeal method. (Five of these have been cured.) The indication for treatment is that such procedure can only be justifiable where the whole of the diseased tissue can be removed, and he prefers forceps and curettes, or any other method except galvano-cautery, whereby the tumour may be taken away.

Delavan has also entered extensively into the question of surgical treatment in malignant diseases of the larynx (Sec. Lar., B. M. Assoc., XI., p. 622). Cases of interest are also, amongst others, reported by Beale (Lar. Soc. Lon.), epithelioma following syphilis and tubercle (I., p. 46); Lack, case of total extirpation (Lar. Soc. Lon., II. p. 73); Brady, partial laryngotomy (IV., p. 219). Interesting cases of simple neoplasms of the larynx have been referred to by Willcocks. The author raises the question of thyrotomy in children (I., p. 50). Hunter Mackenzie (B. M. A.) treats of the question of thyrotomy, the recurrence after intralaryngeal operation, and the use of tracheotomy in neoplasms of the larynx in children (II., p. 90). Lichtwitz, sero-mucous cyst of the larynx, etc. (III., p. 119); McBride, fatty tumour of epiglottis (II., p. 64); Jousset, cyst of epiglottis (III., p. 157); Martuscelli, amyloid neoplasms ("Archiv. Ital. di Lar.," Jan., 1897); Raugé, ventricular laryngocele (VIII., p. 470); Heryng, phenol-sulphorinate in papilloma of the larynx ("Ther. Monats.," March, 1897).

VOICE.—The singing voice has been referred to extensively during the past year by Krause, Hellat, Catti, Heryng, Botey, Cozzolino, in a discussion on loss of voice in singers (Moscow Inter. Cong., Sec. Lar., XII., p. 676), and also by Campbell, who criticises Joal's classification (I., p. 35). Kanthack describes interesting interstitial myositis in nodule of singer's vocal cord (III., p. 116). Mendel leans more to inflammatory

origin of same (IV., p. 221). Biaggi deals with case of eunuch's voice (III., p. 154), possibly due to arrest of development. Dundas Grant recommends vocal exercises in certain forms of hoarseness (IX., p. 499).

TUBERCLE.—This question has as usual had great attention paid to it. In the Section of Laryngology an extensive and interesting discussion took place at the Moscow International Congress. Dr. Gleitsmann (XII., p. 655) opened the discussion in an interesting and important review of his own experience and the work of others. Drs. Botey, Scheppegrell, Gavino, Weil, Heymann, Przedborski, Chiari, and Hajek also took part in the discussion (X., p. 543). The question of treatment from all standpoints, but largely from the surgical, was considered. The impression was strongly given that distinct progress had recently been made in the surgery of laryngeal tuberculosis. Special attention was directed to remedies such as creosote, guaiacol (Botey), benzoïnæ, europen, menthol, sulpho-ricinate of phenol (Ruault and Heryng), enzymol, antiphthisin, and local anæsthetics. The full report in the "Transactions" will be of great interest. Ligno-sulphate is recommended by Bransfeld ("Deut. Med. Woch.," 1st April, 1897). Many cases of interest are also recorded by individual observers, such as pedunculated (tubercular) tumour of cords, (Bronner, II., p. 73).

X RAYS.—These continue to attract attention in our special department. Schierer's paper in the "Archiv. Internat. Lar., Ot., et Rhin.," No. 6, is interesting. Mount Bleyer describes the use of the fluorescent screen in diagnosis of laryngeal and chest affections, in a paper read at the Moscow Congress, 1897 (XI., p. 608). Macintyre showed (Lon. Lar. Soc., III., p. 113) photographs of soft as well as hard structures of larynx and thorax, and at Moscow Congress (XI., p. 608) he described new and powerful apparatus, with recent methods for photographing or viewing on screen tissues of the larynx, thorax, and face, with special reference to quick exposures in deep-seated structures. Scheppegrell exhibited photographs at the Amer. Lar., Rh., and Ot. Soc. (XII., p. 682).

NERVOUS AFFECTIONS OF THE LARYNX.—A large amount of work has been done in this special class of affections during the year, and one of the most important contributions to the literature of nervous affections of the larynx has been the result of a series of statements by Grossmann, in which he attacked the views of Semon, Krause, and others. Special attention has been paid by him to Semon's law, and the latter has replied in a most able and valuable paper, in which the whole question of motor innervation of the larynx has been reviewed and detailed. In his thesis Grossmann states that the acceptance of this view has led to very weighty conclusions, and that of late the whole teaching of laryngeal paralysis is based on the axiom that the abductor fibres regularly succumb earlier than the adductor. The interest attaching to this statement will be gathered from one of his conclusions—that there is hardly an observation on abductor paralysis which can be proved. All engaged in this special department will find the correspondence of extreme interest

("Archiv für Lar. u. Rhin.," Sech. Band, Heft 3, Fraenkel). Owing to its importance, however, we will refer to the subject elsewhere in this journal. Heymann deals with toxic paralysis in an extensive review ("Archiv. Internat. de Lar.," No. 16; IX. p. 30). Laryngeal vertigo is considered by Getchell (III., p. 157). Moncorgé records three cases of laryngeal ictus (III., p. 159); Casadesus contributes notes to the same subject (IV., p. 197); and Schadowaldt has had seven under his care ("Archiv Lar. u. Rhin.," Band V.). Tresilian records this condition in a case of tabes (V., p. 239); Moll also places cases on record (Soc. Franç. d'Ot. et Lar., May, 1897). StClair Thomson describes an interesting case of double abductor paralysis with new growth at the base of the tongue; Lazarus describes abductor paralysis in gonorrhœa ("Archiv Lar.," Band V.; VII. p. 399).

REMEDIES.—Coosemans recommends holoraine as a local anæsthetic instead of cocaine (X., p. 554); Gibbs writes of the advantages of eucaïne (IV., p. 219); Newcomb recommends again guaiacol as a local anæsthetic (VII., p. 367); Martin compares eucaïne and cocaine ("Archiv. Inter. Laryn., Ot., et Rhin.," May, 1897). For remedies in tuberculosis see "Tubercle" above.

NEW INSTRUMENTS.—Botey, protector of epiglottis and larynx (II., p. 176); Brown (Montreal), new nasal snare (III., p. 117); Fischer, improved intubation tube (VIII., p. 467).

MISCELLANEOUS PAPERS.—Dr. de Havilland Hall delivered the Lettsomian Lecture this year on diseases of the nose and throat in relation to general medicine (IV., p. 221); Turner deals with the question of intubation as a substitute for tracheotomy ("Intercol. Med. Journ.," IV., p. 221); Rosenberg writes on laryngitis fibrinosa (XII., p. 608); Bosworth on pemphigus of the larynx ("Laryngoscope," July, 1897).

MOUTH AND PHARYNX.

BY A. SANDFORD, M.D.

January, 1897.

A Foreign Body removed from the Larynx with the Aid of the Autoscope—Max Thorner (Cincinnati). ("Journ. of Laryngol., Rhinol., and Otol.," Jan., 1897.) With a case. "Autoscopy," a valuable aid to diagnosis and operative procedures on throat and larynx.

Case of Hæmatoma of Palate (?)—E. Law. (Laryngol. Soc. of Lond., Nov. 11, 1896.)

Sarcoma of Tonsil—Herbert Tilly. (Laryngol. Soc. of Lond., Nov. 11, 1896.)

Ulceration of Mouth of Doubtful Origin—Dr. Ball. (Laryngol. Soc. of Lond., Nov. 11, 1896.)

Disease of Tonsil, Soft Plate, Pharynx, and Larynx, syphilitic in appearance, and occurring in the course of Pulmonary Tuberculosis—Jobson Horne. (Laryngol. Soc. of Lond., Nov. 11, 1896.)

February, 1897.

Photographs of a Case of Rapid Destruction of the Nose and Face—P. McBride. (Laryngol. Soc. of Lond., Dec. 9, 1896.)

Case of Ulceration of Pharynx—C. A. Parker. (Laryngol. Soc. of Lond., Dec. 9, 1896.)

Case of Thickening of Hard Palate—Dr. Bond. (Laryngol. Soc. of Lond., Dec. 9, 1896.) Probably an exostosis.

(Esophageal Tumour (Fibroma)—Dr. Bond. (Laryngol. Soc. of Lond., Dec. 9, 1896.)

Specimen of Angio-Fibroma of Pharynx, illustrating Effects of Pressure on Superior Maxillary Bones—A. A. Bowlby. (Laryngol. Soc. of Lond., Dec. 9, 1896.)

Case of Pharyngeal Tumour—A. A. Bowlby. (Laryngol. Soc. of Lond., Dec. 9, 1896.)

Gonorrhœic Angina of Ludwig—J. Bobone. ("Bollet. delle Malatt. dell' Orecchio," etc., Aug., 1896.) With a case.

Tubercular Ulcer of Tongue (two cases) — Hector C. Cameron. ("Glasgow Med. Journ.," Aug., 1896.) Ulcers situated on under surface between tip and frænum, probably due to abrasion by irregular edges of teeth during the paroxysms of coughing, as both patients suffered from chronic phthisis.

Quinsy: the Differential Diagnosis and Treatment—H. J. Coulter. ("Journ. of Amer. Assoc.," Nov. 7, 1896.) Speaks highly of the efficacy of ten-grain doses of lactophenin every three hours.

March, 1897.

Case of Pharyngeal Pouch—P. de Santi. (Laryngol. Soc. of Lond., Jan. 13, 1897.) Probably of congenital origin, and containing air or veins. Transillumination suggested to decide the latter point.

Case of Black Tongue—Dr. Semon. (Laryngol. Soc. of Lond., Jan. 13, 1897.) Showing a large patch of greatly elongated, hair-like, inky-black papillæ in the region of the circumvallate papillæ, and yielding to the local application of a five per cent. ethereal solution of acid. salicyl., mixed with a five per cent. collodion solution, and followed by application of peroxide of hydrogen by means of cotton-wool several times daily.

Syphilis of Mouth, Pharynx, and Larynx: its Treatment by the Mixed Thermal Cure—Sixto Botella. (First Spanish Cong. of Otol., Rhinol., and Laryngol., Nov., 1896.) The combination of hot sulphur baths with mercurial treatment facilitates the elimination of the metal, and so counteracts the tendency to acute mercurialism.

The Relation of Arthritic Temperament with Affections of the Nose, Pharynx, Larynx, and Bronchi—Aurelio Enriquez. (First Spanish Cong. of Otol., Rhinol., and Laryngol., Nov., 1896.)

Sewer Air Poisoning—F. W. Burton-Fanning. ("Lancet," Oct. 24, 1896.) Several of eleven cases showed evidences of tonsillitis among other marked symptoms.

Scarlatinous Angina and Treatment by Marmorek's Serum—A. Dubois. ("Thèse de Lille," 1896.) Its varieties and the prevention of complications by Marmorek's serum. As an auxiliary, he advises carbolic lavage,

painting with steresol, and gargling with Labarraque's liquor (fifty per cent.).

A Case of Tumour of the Pharynx; removal after Laryngotomy; Recovery—Pierce Gould. ("Lancet," Oct. 24, 1896.) After a preliminary laryngotomy, soft palate was split, and tumour (fibroma) successfully removed.

Non-Malignant Tumours of the Tonsil, with Report of a Case—H. D. Hamilton. ("Montreal Med. Journ.," Sept., 1896.) A large semi-pedunculated lymphangioma of the upper part of the right tonsil, with no general glandular or tonsillar disease.

The Treatment of the Throat, Nose, and Ear in Scarlet Fever—Henry Jackson. ("Arch. Ped.," XIII., 821.) Throat relieved by sucking ice, or a warm saline solution. Potass. chlor. to be avoided, as possibly irritating to kidneys. Such sequelæ as pseudo-membranous patches, their extension best treated with antiseptic sprays. Douches likely to be followed by ear disease. As a spray, a twenty-five volume solution of peroxide of hydrogen recommended. The antistreptococcus serum treatment highly extolled by Marmorek in serious scarlatinal sore throat and cervical abscess.

Diagnosis of Measles from the Study of the Exanthema as it appears on the Buccal Mucous Membrane—Koplik. ("Arch. Ped.," XIII., 918.) As a pathognomonic feature is mentioned a number of irregular spots of a bright red, and in the centre of each a minute bluish white speck.

Pulsating Vessels in Pharynx (three cases)—P. McBride. ("Edin. Med. Journ.," Dec., 1896.)

A Case of Aphthous Angina—M. Mounier. ("Gaz. Méd. de Nantes," Oct. 12, 1896.)

Epithelioma of Tonsil and Tongue—Morton. (Brit. Med. Clin. Soc., "Brit. Med. Journ.," Nov. 21, 1896.) Right Tonsil removed with Floor of Mouth and Right Half of Tongue as far as Hyoid Bone. No recurrence after five months.

Severe Stomatitis after Potassium Iodide—J. F. Schamberg (Philadelphia). ("The Med. and Surg. Reporter," July 11, 1896.) Dose taken was five grains three times daily.

Anatomy of Submaxillary Gland—G. Soffiantini. (A paper read before Lombard Med. Soc., Jan. 15, 1896.) ("Boilet. delle Malattie dell' Orecch.," Giugno, 1896.) Basing his conclusions on three hundred cases, he says the gland extends lower than is generally believed. Such conclusions are of some importance in dealing with operations involving the gland, and in ligation of the lingual artery, which would require a lower incision than is usual.

Case of so-called Angio-Neurotic Œdema — Faulconer Wright ("Brit. Med. Journ.," Sept. 19, 1896)—where patient, a lady of sixty years, has suffered for the last thirty-five years from formation of localized œdematous swellings, with slight reddening and pitting on pressure, and no marked disturbance of health. All parts affected, including face and tongue.

Epithelioma of Upper Third of Œsophagus and Œsophagotomy—E. K. Hamilton (Adelaide). ("Austral. Med. Gaz.," June 20, 1896.) A case.

Two Cases of a Halfpenny in Oesophagus. Diagnosis by X Rays—Johnston and Holland. ("Brit. Med. Journ.," Dec. 5, 1896.) Removal easy.

Foreign Body in Oesophagus ; Localization by X Rays—Raw. ("Brit. Med. Journ.," Dec. 5, 1896.)

April, 1897.

Case of Cleft Palate with Hypertrophy of Posterior Extremities of Inferior Turbinates and Adenoids—Ed. Law. (Laryngol. Soc. of Lond., Feb. 10, 1897.)

Case of Cleft Palate with great Hypertrophy of Inferior Turbinates—Ed. Law. (Laryngol. Soc. of Lond., Feb. 10, 1897.)

Case of Tumour of Uvula—Dr. Bennett. (Laryngol. Soc. of Lond., Feb. 10, 1897.) Of a simple nature.

Case for Diagnosis : an Affection of Mouth and Lower Jaw—Lawrence. (Laryngol. Soc. of Lond., Feb. 10, 1897.) Varying opinions as to its nature—syphilitic, actinomycosis, or tubercular. Appeared in the form of a fluctuating tumour of gum on inner side of right alveolus, followed by a swelling on left cheek.

Hypertrophic Pharyngitis and Tonsillitis, with Chronic Enlargement of Parotid and Submaxillary Glands—Spencer. (Laryngol. Soc. of Lond., Feb. 10, 1897.) A case.

Three Cases of Fibroma of Palate treated by Electrolysis—Lennox Browne. (Brit. Laryngol., Rhinol., and Otol. Assoc., Jan. 29, 1897.) Good results.

Cyst of Pharynx associated with Cystic Bronchocele, and probably of Thyroid Origin—T. Marsh. (Brit. Laryngol., Rhinol., and Otol. Assoc., Jan. 29, 1897.) A case. Symptoms resembling so closely those produced by pressure that cause might have been easily overlooked. Aspiration and incision was the only treatment permissible, as the patient, a female of fifty-five years, was in a weak physical condition. Enucleation, by an external incision, would be the ideal course under the conditions of the tumour.

Dyspnœa and Lingual Varix—Mayo Collier. (Brit. Laryngol., Rhinol., and Otol. Assoc., Jan. 29, 1897.) A case.

Sulphide of Calcium in Exudative Pharyngitis—Perez Moreno. (First Span. Cong. of Otol., Rhinol., and Laryngol., Nov. 20, 1896.) Results encouraging.

Diseases of Nose and Throat in Relation to General Medicine—F. de Havilland Hall. (Letts. Lect., Med. Soc. of Lond., Feb. 1, 1897.) The importance of a healthy condition of these parts as a prophylaxis against infectious air-borne germs. Quotes cases illustrative of the susceptibility of atrophied or diseased nose and throat to offer a favourable nidus for pathogenic organisms. Counsels against operations on nose and throat in those exposed to any infectious disease or unhealthy surroundings.

Experiments on the presence of Diphtheria Bacilli in the Mouths of Children in a large Hospital not affected with Diphtheria—Muller (Berlin). ("Jahr. für Kinder.," Band XLIII., Heft 1.) Of one hundred children

without any diphtheritic symptoms, Loeffler's bacilli were found in the mouths of twenty-seven, showing that bacilli cannot produce the disease if a personal immunity exists.

Treatment of *Leptothrix Mycosis* with Ferr. Perchloride—Colin. ("Arch. Int. Laryngol., Otol., et Rhinol.," Tome IX., No. 5.) With considerable benefit.

Riga's or Urban Cardarelli's Disease—Francesco Fede. ("Arch. für Kinderheilk.," 1897, Vol. XXI., p. 351.) Often seen in children in Lower Italy, and consists of a grey, pearl-like swelling on under surface of tongue and on frænum, and due to friction against lower incisors. Three types of the disease are mentioned: a purely local form; the second showing in addition general disturbance of health; and the third a very grave illness which may end fatally. For treatment, excision followed by cauterization with argent. nitrat.

A Case of Acquired Perforation of Anterior Pillar of Fauces—Griner. ("Ann. des Mal. de l'Or., du Lar.," etc., Feb., 1897.)

Congenital Obliteration of the Œsophagus, with other Malformations—Kessick C. Bowes (Herne Bay). ("Brit Med. Journ.," Mar. 13, 1897.)

June, 1897.

On the Identity of the Bacterium of Foot-and-Mouth Disease in Animals and in Men—Bussenius and Siegel. ("Maul und Klanensenche und Mundschenke," "Deutsche Med. Woch.," Jan. 28 and Feb. 4, 1897.)

On the Course of the Taste Fibres—A. F. Dixon. ("Edin. Med. Journ.," April, 1897.) Concludes that impulses reach brain through seventh and ninth cranial nerves.

Ludwig's Angina—Ombridanne and Klein. (Soc. Anat. Paris, Jan. 15, 1897.)

Primary Latent Tuberculosis of Pharyngeal Tonsil—F. Pluder (Hamburg) and W. Fischer (Altona). ("Arch. für Laryng. und Rhin.," Band IV., Heft 3.)

Diseases of the Naso-Pharynx and Pharynx—Moure. ("XXth Century Practice," N.Y.: W. Wood & Co.)

July, 1897.

Guaiacol as an Anæsthetic in Minor Operations on Nose and Throat—Jas. E. Newcomb. (Amer. Laryng. Assoc., May 4, 1897.) Superior to cocaine when used on skin surfaces, but not equal to it on mucous surfaces.

The Treatment of Chronic Affections of the Tonsils—Gleitsmann (New York). (Amer. Laryng. Assoc., May 4, 1897.)

Tuberculosis of Soft and Hard Palate—De Santi. (Laryngol. Soc. of Lond., April 14, 1897.) A case.

Varicose Lingual Veins—Dundas Grant. (Laryngol. Soc. of Lond., April 14th, 1897.) A case temporarily relieved by galvanic cauterization.

Sub-Hyoid Fistula of Congenital Origin—Charsley. (Laryngol. Soc. of Lond., April 4, 1897.) A case.

Primary Syphilitic Disease of Left Tonsil—Holz. A case. (Berl. Med. Soc., "Deutsche Med. Woch.," April 22, 1897.)

Œsophageal Cancer—Zadek. Specimen. Perforated Aorta, with

Fatal Termination. (Berl. Med. Soc., "Deutsche Med. Woch.," April 22, 1897.)

Mycosis Tonsillaris Benigna—Walker Downie. (Glas. Med. Chir. Soc., "Glas. Med. Journ.," May, 1897.)

Leukoplakia : Diagnosis and Therapeutics of—Lieven (Aix-la-Chap.). (Congr. of West. Germ. Laryngol. and Otol., Jan., 1897.)

Dermoid Cyst of Floor of Mouth, about size of Hen's Egg—Kroneberg (Solingen). (Congr. of West Germ. Laryngol. and Otol., Jan., 1897.)

Reflex Disturbances of Nose, Throat, and Ears in Childhood—Pimilla (Madrid). (First Span. Congr. of Otol., Rhinol., and Laryngol., Nov. 20, 1896.)

Results of Diphtheria Treatment by Heilserum in Hungary—Békésy. ("Wien. Klin. Rundschau," 1897, Nos. 16 and 17.) Report on 9000 injections. Of all treated patients, 19.1 per cent. died. Before treatment by serum, mortality said to have been from 40 to 43 per cent. Mortality was—

In diphtheria of pharynx	...	...	13.4 per cent.
In diphtheria of larynx	...	...	38.7 "
Mixed form	...	...	42.1 "
Undecided	...	...	11.6 "

Tracheotomy or intubation was performed in 372 cases : 190 cured, and 182 died = mortality 48.9 per cent. The author does not hope much from heilserum.

Further Note on the Course of the Taste Fibres—F. A. Dixon. ("Edin. Med. Journ.," June, 1897.)

Removal of Foreign Body from Œsophagus by Œsophageal Forceps, guided by Aid of Fluoroscope—H. B. Delatour. ("Med. Record," N.Y., May 1, 1897.) A case.

An Artificial Palate and Teeth in Œsophagus—Fr. Franken. ("Munchener Med. Woch.," Feb. 9, 1897.) A case.

The Clinical Diagnosis of Spindle-shaped Dilatation of Œsophagus—Th. Rumpel. ("Munchener Med. Woch.," Apr. 13 and 20, 1897.) A case.

August, 1897.

A Microscopical Specimen of Acute Ulcerative Lacunar Tonsillitis—R. Lake. (Laryngol. Soc. of Lond., June 9, 1897.) Specimen showed large masses of beaded bacilli situated in the advancing edge of the slough ; in the older slough they were more rare. This disproves Moure's idea that cause of ulceration was chiefly due to pressure of retained secretion, and not to micro-organisms.

Syngomyelia, with Paresis of Left Half of Soft Palate and Abductor Paralysis of Left Vocal Cord—Jobson Horne. (Laryngol. Soc. of Lond., June 9, 1897.) A case.

Cancer of Œsophagus and Trachea, causing obstruction of Trachea and Bilateral Paralysis of Cords—Clifford Beale. (Laryngol. Soc. of Lond., June 9, 1897.) Specimen.

Specific Adhesions of Soft Palate—Dr. Berens. (N. Y. Acad. Med., Apr. 28, 1897 ; "Laryngoscope," June, 1897.)

Simulated Sarcoma of Tonsil, with Case—Bryson Delavan (New York). (Amer. Laryngol. Assoc., "Med. Rec.," May 22, 1897.) Disappeared under use of the iodide of potassium, although there was no suspicion of syphilis.

On Carcinoma of Pharynx—Krönlein (Zurich). (Congr. der Deuts. Gesellsch. für Chirur., Berlin, April 21-24, 1897; "Deuts. Med. Woch.," May 6, 1897.) Speaker had seen sixty-one cases—fifty-six men and five women.

On the Lymphatics of the Tongue, with special reference to the spread of Lingual Cancer—Kuttner (Tübingen). (Cong. der Deutsche Gesells. für Chirur., Berlin, April 21-24, 1897; "Deutsche Med. Woch.," May 6, 1897.) Lymph from one side of tongue flows away on both sides. The lymph channels run to the deep cervical and submaxillary glands, and it is therefore necessary in every operation for lingual cancer to methodically clear out the whole of these, and that on both sides.

A Case of Exaggerated Mobility of Tongue—Bourdette. ("Ann. des Mal. de l'Or.," May, 1897.)

Tonsillar Lympho-Adenitis—G. Geronti. ("Lingoadenia Tonsillare.") ("Arch. Ital. di Otol.," etc., fifth year, 1897.) A case. He believes the disease has a parasitic origin.

Cases of Follicular Tonsillitis due to Milk Infection—Edward C. Grey and W. D. Severn. ("Lancet," June 12, 1897.)

Acute Tonsillitis due to Staphylococcus Pyogenes Aureus—A. Heddaens. ("Munchener Med. Woch.," May 4, 1897.) A case.

Artificial Alimentary Channel in Cancer of Lower Parts of Pharynx and Top of Oesophagus—Jaboulay. ("Province Méd.," April 17, 1897, and "Presse Méd.," June 30, 1897.) The method consists in opening alimentary canal above and below obstruction, and of re-establishing the continuity of the lumen with a rubber tube, which is left in position.

Retropharyngeal Abscess—C. E. Munger. ("Laryngoscope," June, 1897.) As a sequel of *la grippe*.

A Case of Bucco-Facial Actinomycosis; Cure—Jaquet. ("Presse Méd.," May 12, 1897.)

Acute Streptococcic Macroglossitis—Sabrazes and Bousquet. ("Presse Méd.," June 30, 1897.) A case.

Tuberculosis of Tonsils, Pharynx, and Larynx—Lewis Somers (Philadelphia). ("Med. and Surg. Reporter," May 29, 1897.) States that secondary involvement of pharynx occurs in nearly a quarter of all cases dying of pulmonary or laryngeal tuberculosis.

September, 1897.

Angina Epiglottidea Anterior — William Milligan. Two cases. ("Journ. of Laryngol., Rhinol., and Otol.," Sept., 1897.)

Brief Notes of an Unusual Case of Gumma of the Tonsil—Ernst Michels. ("Journ. of Laryngol., Rhinol., and Otol.," Sept., 1897.)

A Case of a Post-Nasal Growth hanging down into the Oro-Pharynx—Dunda Grant. (Brit. Laryngol., Rhinol., and Otol. Assoc., July 16, 1897.)

A Case of Epithelioma of the Soft Palate—Lennox Browne. (Brit. Laryngol., Rhinol., and Otol. Assoc., July 16, 1897.)

A Case of Anterior Projection (Lordosis) of Cervical Vertebrae simulating Adenoids—Dundas Grant. (*Brit. Laryngol., Rhinol., and Otol. Assoc.*, July 16, 1897.)

A Case of Audible Clicking Murmur accompanying Speech—Dundas Grant. A case. Probably due to separation of sticky walls of Eustachian tubes by clonic spasms of the tensor palati muscle.

Molluscum Pendulum of Tonsil—Furet. A case. (*Soc. Franç. d'Otol., de Laryngol., et de Rhinol.*, May 3, 1897; "*Arch. Internat. de Laryngol., Otol., et Rhinol.*," and the "*Presse Méd.*")

A Variety of Chronic Abscess of Soft Palate—Cartaz. Two cases. (*Soc. Franç. d'Otol., de Laryngol., et de Rhinol.*, May 3, 1897; "*Arch. Internat. de Laryngol., Otol., et de Rhinol.*," and the "*Presse Méd.*")

Syphilitic Stricture of Upper End of Oesophagus treated by Jaboulay's Sound—Lannois (Lyon). (*Soc. Franç. d'Otol., de Laryngol., et de Rhinol.*, May 3, 1897; "*Arch. Internat. de Laryngol., Otol., et Rhinol.*," and the "*Presse Méd.*")

Acute Inflammation of the Lingual Tonsil—Bar (Nice). (*Soc. Franç. d'Otol., de Laryngol., et de Rhinol.*, May 6, 1897; "*Arch. Internat. de Laryngol., Otol., et Rhinol.*," and the "*Presse Méd.*")

Retropharyngeal Abscess—F. Huber. ("*Arch. Ped.*," June, 1897.) Forceps affords best means of evacuation.

Case of Pemphigus Chronicus Vulgaris of the Mouth and Epiglottis—Lewis Miller (Brooklyn). ("*New York Med. Journ.*," July 2, 1897.)

On the Position of the Base of the Tongue in Peripheral Facial Paralysis—F. Schultze. ("*Münchener Med. Woch.*," June 8, 1897.)

October, 1897.

On the Use of Phenol Sulfo-Ricinicum in Tubercle of the Larynx and other Chronic Diseases of the Nose and Throat—L. Przedborski. (Twelfth Internat. Med. Cong., Moscow, Aug. 19, 1897.) Advocates its more general use.

Oesophagoscopy and its Clinical Significance—Von Hacker (Innsbruck). (Twelfth Internat. Med. Cong., Moscow, Aug. 19, 1897.) An important aid to diagnosis and therapeutics.

A Pedunculated Adeno-Carcinoma of the Soft Palate—A. Baurowicz (Cracow). ("*Arch. für Laryngol. und Rhinol.*," Band VI., Heft 1.) A case.

Stomatitis Ulcerosa—Bernheim. (K. K. Gesellschaft der Aerzte in Wien, June 18, 1897.)

On Intermittent Paresis of Palate in Neurasthenia—Garel. ("*Arch. Int. de Laryngol., Otol., et Rhinol.*," May and June, 1897.) Three cases.

Edematous Urticaria of the Mucous Membrane of the Mouth and Fauces—Gaudier. ("*Echo Méd. du Nord*," Aug. 8, 1897.) A case.

A Clinical Lecture on a Case of Hypertrophy of the Gums—Christopher Heath. ("*Brit. Med. Journ.*," May 1, 1897.)

November, 1897.

The Use of X Rays in Diseases of the Nose, Throat, etc.—Macintyre (Glasgow). (Twelfth Internat. Med. Cong., Moscow, Aug. 21, 1897.)

Chronic Follicular Tonsillitis—W. Scott Renner (Buffalo, N.Y.). ("*Med. Record*," Aug. 28, 1897.) With symptoms and treatment.

Notes of a Case of Chronic Superficial Dissecting Glossitis—E. M. Sympton. ("Brit. Med. Journ.," Sept. 11, 1897.) Its treatment.

A Handbook of Diseases of Nose and Pharynx—Jas. B. Ball. (Lond.: Ballière, Tindall, and Cox).

December, 1897.

A Case of Malignant Disease of Œsophagus and Thyroid Gland—Dundas Grant. (Brit. Laryngol., Rhinol., and Otol. Assoc., Oct. 29, 1897.)

Throat Lesions in Enteric Fever—Dr. Tresilian. (Brit. Laryngol., Rhinol., and Otol. Assoc., Oct. 29, 1897.) Eight cases.

Chronic Follicular Tonsillitis—Scott Renner (Buffalo). (Amer. Laryngol., Rhinol., and Otol. Soc., May 1, 2, and 3, 1897.)

The Strepto-Bacillus of Malassez-Vignal as Factor of Anginas—Carré. ("Lyon Méd.," May 2, 1897.)

Primary Ulcer of Tonsils—L. Jullien. ("Ann. de Dermat.," Vol. VIII., p. 275.)

Notes on the Course of the Fibres of Taste—W. A. Turner. ("Edin. Med. Journ.," Sept., 1897.)

Gastrostomy for Malignant Disease of Œsophagus—Barling. ("Bir. Med. Review," June, 1897.) Records of three cases.

Endoscopy for Œsophagus and Stomach; Œsophagoscope—G. Kelling. ("Münch. Med. Woch.," Aug. 24, 1897.)

N.B.—Sources of above extracts are taken from "THE JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY" of the corresponding month, unless otherwise mentioned.

OTOLOGY.

BY DUNDAS GRANT, M.D., F.R.C.S.

The following commentaries and references will indicate the more important of the papers on otology which have been abstracted or published in the volume of the JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY for 1897. Such of the abbreviations as are not perfectly obvious will be found in the appended list. The Arabic figures following the letters "J. L." indicate in each case the page of the volume on which the paper or abstract referred to is to be found.

TESTS FOR HEARING.—The *Present Position of the Various Tests* has been discussed by Prof. Bezold ("A. of O.," July, 1896), and in spite of some rather unfortunate mistranslations (*vide* "J. L.," 97) the English reader will find the statement a clear one. The value of tests for tones of very low pitch is strongly enforced. In studies on the results of testing with the *Continuous Tone Range* ("Zeitschr. für Psychol. u. Physiol. der Sinnes-Organen," Band 13; "J. L.," 165) he finds support for Helmholtz's theory. Pollak ("Aust. Ot. Soc.," "J. L.," 632) finds the continuous tone range of practical value. Harris ("A. of O.," No. 1, 1897; "J. L.," 455) has found confirmation of the now generally received views, having

tested *sixteen hundred cases with Hartmann's forks*. Other interesting papers have been contributed by Dench ("Am. Ot. Soc.," "J. L.," 511) and Baratoux.

NEW INSTRUMENTS.—Lake's *Mastoid Antrum Guide* ("J. L.," 234) is well adapted to the anatomical topography of the aditus, and in its present form is free from the risks attaching to its original sharp edges. We may note Gruber's *New Angular Handle* ("Aust. Ot. Soc.," "J. L.," 627), Cutter's modified *Eustachian Catheters* ("Moscow Cong.," "J. L.," 612), Mounier's guarded *Gouge for the Outer Wall of the Attic* ("Arch. Inter.," Jan. and Feb., 1897; "J. L.," 290), and Pollak's ("Aust. Ot. Soc.," "J. L.," 84) and Hammerschlag's devices for securing *Safety from Septic Infection* ("Aust. Ot. Soc.," "J. L.," 250).

REMEDIES.—*Peroxide of Hydrogen* is recommended by Politzer ("Aust. Ot. Soc.," "J. L.," 447), in various suppurative diseases, and particularly as a preliminary to the use of astringents or other antiseptics. Bacon ("Am. Ot. Soc.," "J. L.," 512) speaks in favour of *Pilocarpin*. *Holoraine* is found by Coosemans ("Belg. Soc.," "J. L.," 554) to be free from some of the objections attaching to cocaine. *Thyroid Tablets* are recommended by Bruhl in dry catarrhs of the middle ear ("Aust. Ot. Soc.," "J. L.," 131).

AURICLE.—Gruber describes a case of *Herpes of the Auricle* ("Aust. Ot. Soc.," "J. L.," 127), arising from a rheumatic affection of the fifth nerve. A case of *Bilateral Malformation* of extreme type is narrated by Kaufmann ("Aust. Ot. Soc.," "J. L.," 631); his beautiful microscopical sections (seen by D.G.) show a perfectly normal labyrinth.

EXTERNAL MEATUS.—*Cerumen* has been submitted to analysis by Lannois ("Ann. des Mal.," June, 1897; "J. L.," 474). *Hyperostosis* is shown by Hartmann ("A. of O.," Jan., 1897) to be confined to the tympanic element of the temporal bone, and cases are described by Gruber ("Aust. Ot. Soc.," "J. L.," 447), Politzer ("Aust. Ot. Soc.," "J. L.," 445), and Field ("Lancet," July 3, 1897; "J. L.," 650). The tendency seems to be for them to become stationary as soon as the bone attains its full development. A striking case of post-suppurative *Web Formation* was shown by Tresilian ("B. L. R. A.," "J. L.," 298). Bar deals with *Otomycosis* ("Moscow Cong.," "J. L.," 611). He recommends irrigation with chlorine water, followed by the instillation of an alcoholic solution of sublimate. For *Boils*, Field ("B. M. J.," June 12, 1897; "J. L.," 580) advises glycerine locally and yeast internally. Local application of tincture of iodine is also mentioned as beneficial.

MIDDLE EAR.—Urbantschitsch describes a *Postero-Superior Bulging of the Membrana Tympani* resulting from a valve-like action of the Eustachian tube ("Aust. Ot. Soc.," "J. L.," 562), and Falta ("Aust. Ot. Soc.," "J. L.," 624) a case of *Complete Atresia of the Tube*, in which the impairment of hearing was very slight. In regard to the *Modern Pathology and Treatment of Acute Otitis Media*, Pierce ("Chicago Acad. Med.," "J. L.," 195) points out the fact, now getting more and more recognized, that the contents of the inflamed tympanum only become

purulent after spontaneous or artificial evacuation—therefore, probably through infection from without. This is to be prevented by sterilizing the meatus by means of antiseptics, inserting a moist antiseptic dressing, and covering the auricle with another. Paracentesis may then be safely performed.

NON-SUPPURATIVE INFLAMMATION. — To maintain a *Permanent Perforation*, Miot ("Fr. Soc.," "J. L.," 505) advises the removal of the handle of the malleus, and Alt and Gruber paracentesis, followed by Eustachian injections of vaseline oil ("Aust. Ot. Soc.," "J. L.," 446). Kaufmann was not in favour of this (*ibid.*). Active *Surgical Treatment* is recommended by Gárnault ("J. L.," 473), Malherbe ("Arch. Inter.," March and April, 1897 ; "J. L.," 406), and Mounier ("Fr. Soc.," "J. L.," 503). Their results will be watched with interest by less sanguine operators. Cohn-Kysper ("A. of O.," April, 1897 ; "J. L.," 472) advises in adhesive conditions the introduction of a few drops of a *Glycerine Pepsin* derived from the dog. Bruhl recommends the internal administration of *thyroid* tabloids ("Aust. Ot. Soc.," "J. L.," 131).

SUPPURATIVE INFLAMMATION OF THE MIDDLE EAR: ACUTE.—Field points out that this may in infants *simulate Meningitis* ("B. M. J.," June 12, 1897 ; "J. L.," 579). Fruitnight dwells on the *Importance of Early Diagnosis* ("Med. News," Sept. 12, 1896 ; "J. L.," 100), as shown by results obtained from early treatment in an epidemic of measles. Among the complications Cartaz finds *Facial Paralysis* ("Arch. Inter.," July and Aug., 1896 ; "J. L.," 98), and Cozzolino ("Bollet.," July, 1896 ; "J. L.," 100) *Pseudo-Meningo-Cerebral Symptoms*. Otitis media may occur in *Epidemic Cerebro-Spinal Meningitis*, as in a case of Alt's ("Aust. Ot. Soc.," "J. L.," 445). Politzer observed a severe *Otitis in Influenza occurring without other Symptoms* than persistent otorrhœa, and only cured after opening of the mastoid ("Aust. Ot. Soc.," "J. L.," 131). In a case of Kipp's ("Am. Ot. Soc.," "J. L.," 138) extension to the mastoid cells took place, and *after incision Erysipelas* supervened.

Much attention has been given to *Inflammation of the Ear in Infants* by Gompertz ("Aust. Ot. Soc.," "J. L.," 632), Field ("B. M. J.," June 12, 1897 ; "J. L.," 579), Corralero ("Span. Cong.," "J. L.," 77), Marsh ("B. M. J.," July 24, 1897 ; "J. L.," 527), and Panzer ("Aust. Ot. Soc.," "J. L.," 557). As a rule the symptoms rather than the objective signs are the guide, but the latter may be more hopefully investigated if the child's auricle is drawn backwards and downwards as directed by Dench. The controversy between Dalby ("B. M. J.," July 24, 1897 ; "J. L.," 578) and Field ("B. M. J.," June 12 ; "J. L.," 579) in regard to the results of neglecting paracentesis is of great interest. Wingrave brought forward a case of *Tuberculous Disease of the Petrous Bone* giving rise to optic neuritis (B. L. R. A., "J. L.," 674).

The *Condition of the Middle Ear in Diphtheria*, according to Lommel ("A. of O.," April, 1897 ; "J. L.," 527), shows it to be pathological in ninety-six per cent. of cases, although in many the Eustachian tube is normal. This shows that the implication of the middle ear is not merely a matter of continuity.

SUPPURATIVE INFLAMMATION OF THE MIDDLE EAR: CHRONIC.—The tendency is to resort with increasing readiness to *Operative Measures* in the treatment of chronic suppuration of the middle ear as such. The subject is discussed by Dench ("Med. News," July 3, 1897; "J. L.," 579), Block ("J. L.," 513), and others; while Lucae ("Therap. Monatsheft," Aug., 1897; "J. L.," 709) compares the *Conservative and Operative Methods*, advocating more patience in the use of the former. Spira ("Aust. Ot. Soc.," "J. L.," 559) supports the same contention. Among important conservative methods must be counted Stoker's *Oxygen Treatment* ("B. L. R. A.," "J. L.," 489), and the *Alcohol and Glycerine* instillations so valuable in cholesteatoma, as illustrated in Tresilian's case ("B. L. R. A.," "J. L.," 675).

A singular complication in the shape of *Rheumatic Paralysis of the Facial and Trigeminal Nerves* was observed by Gruber ("Aust. Ot. Soc.," "J. L.," 127) in a case of chronic suppuration. In a case under Max the *Promontory was denuded of Periosteum* ("Aust. Ot. Soc.," "J. L.," 125), but this was explained as a stripping off of the mucous membrane during the removal of a polypus—not a necrosis.

THE TYMPANIC ATTIC.—Poltzer read before the Austrian Otological Society ("J. L.," 562) a valuable contribution to the *Pathological Anatomy of the External Attic*, with some important hints on treatment. He only practises radical operation if the hearing is greatly reduced, or if vertigo, headache, or other symptoms of retained cholesteatoma are present. Rueda ("Span. Cong.," "J. L.," 198) pleads for conservative treatment. Redmer ("A. of O.," Oct., 1896; "J. L.," 225) shows how *Spontaneous Recovery* may follow the breaking down of the outer wall of the attic. Mounier has devised a protected gouge ("Arch. Inter.," Jan., Feb., 1897; "J. L.," 290) for attacking this region. Poltzer (*loc. cit.*) anticipates good results from the use of *Protected Burrs*.

RESIDUA OF SUPPURATION OF THE MIDDLE EAR.—*Deafness* arising from perforation or cicatricial adhesions is discussed by Dundas Grant ("Clin. Journ.," Apr., 1897; "J. L.," 224), who points out the hopefulness with which operative treatment may be initiated. The use of *Digestive Ferments* is advised by Cohn-Kysper ("A. of O.," April, 1897; "J. L.," 472).

CHOLESTEATOMA.—Poltzer showed a case ("Aust. Ot. Soc.," "J. L.," 251) in which *Pyæmic Symptoms* threatening life subsided after operation. Gruber ("Aust. Ot. Soc.," "J. L.," 250) considers removal of the pars epitympanica sufficient in small cholesteatoma, but free mastoid opening in large ones. He does not think that cuticular "papering" is either necessary or useful. Dundas Grant exhibited a case of *Spontaneous Dehiscence* ("B. L. R. A.," "J. L.," 497).

MASTOID DISEASE AND OPERATIONS.—Spira ("Wien. Klin. Rundschau," 1897, 17 and 18; "J. L.," 406) reports an instructive case of *Latent Mastoid Disease simulating Neuralgia*, only relieved by operation; and Fridenberg ("Med. News," Oct. 24, 1896; "J. L.," 100) draws attention to the frequency of cases of latent mastoid disease. In

a case of MacCuen Smith's ("Therap. Gaz.," Aug. 16, 1897; "J. L.," 650) there were no local signs, and the pain complained of was situated in the occiput. *Acute Mastoid Emphysema followed by Extra-dural Abscess* occurred in a patient of Hennebert's ("Belg. Soc.," "J. L.," 555). Bonain believes that *Osteo-Periostitis of the Mastoid* after acute suppuration of the middle ear frequently affects the inner surface of the mastoid, which ought therefore to be carefully explored ("French Soc.," "J. L.," 503). Laurens recognizes the occurrence of *Uncomplicated Periostitis* of the mastoid, but considers it rare ("French Soc.," "J. L.," 508). In spite of the negative result in one of his cases he advises that the mastoid cells and antrum should always be opened. Grossard ("French Soc.," "J. L.," 510) recommends the *Treatment of Mastoid Complications by Irrigation through the Eustachian Tube*. This has been advised by Politzer. It was discussed in a previous year in the Austrian Otological Society. Cases of *Bezold's Mastoiditis* are recorded by Lichtwitz ("A. of O.," Jan., 1897; "J. L.," 406) and Délic ("Belg. Soc.," "J. L.," 554). *Phosphor Necrosis of the Temporal Bone* was observed by Wurdemann ("B. M. J.," Nov. 27, 1897; "J. L.," 624), and unusually *highly situated Necrosis* following chronic otorrhœa by Sune y Molist ("Span. Cong.," "J. L.," 387). *Sequestra consisting of the Tympanic Frame and Labyrinth* were removed during a mastoid operation by Politzer ("Aust. Ot. Soc.," "J. L.," 81).

The use of *Drills in Mastoid Operations* is advocated by Blake ("Am. Ot. Soc.," "J. L.," 138), but only in the hands of experts.

Many cases of *Mastoid Operation* have been recorded in illustration of exceptional conditions by Gompertz ("Aust. Ot. Soc.," "J. L.," 80); Sandford ("B. L. R. A.," "J. L.," 187); Panzer ("Aust. Ot. Soc.," "J. L.," 55); Urbantschitsch ("Aust. Ot. Soc.," "J. L.," 254); Kaufmann ("Aust. Ot. Soc.," "J. L.," 446), and others. A series of *Thirty-four Cases of Mastoid Operation* is given by Moure ("Arch. Clin. de Bordeaux," "J. L.," 527); and Sheppard contributes an analysis of *One Hundred and Fourteen Cases of Mastoid Involvement complicating Acute Middle Ear Suppuration* ("Am. Ot. Soc.," "J. L.," 137). The *Results of Operation for Suppurative Ear Disease* formed the subject of a valuable discussion at the recent meeting of the British Medical Association ("B. M. J.," Nov. 27, 1897; "J. L.," 620), in which Buller, Buck, Blake, Ward Cousins, Bacon, and Hugh Jones took part. The *Non-Operative Treatment*, especially in private patients, was advocated in a paper by Buck ("B. M. J.," Nov. 27, 1897; "J. L.," 623), who dwelt on the value of peroxide of hydrogen. Kuhn describes a case of *Death from Air Embolism* due to wound of the lateral sinus during the operation for cholesteatoma ("A. of O.," Jan., 1897; "J. L.," 406), and discusses the diagnosis and treatment.

DANGEROUS SEQUELÆ OF SUPPURATIVE DISEASE OF THE MIDDLE EAR.—We have cases of pyæmia with and without thrombosis of the lateral sinus, cerebral and cerebellar abscess, extra-dural abscess, and meningitis. At the recent International Medical Congress at Moscow, Heymann ("J. L.," 614), Cozzolino ("J. L.," 613), and Botey ("J. L.,"

610) read valuable papers inculcating the advisability of exploring the middle and posterior fossæ of the skull when operating on the mastoid, whenever there is the slightest suspicion of intracranial mischief, or, according to Heymann, as a routine prophylactic measure.

PYÆMIC INFECTION.—This is discussed by Brieger ("A. of O.," Vol. XXV, No. 4; "J. L.," 223), weighing the pros and cons of ligature of the internal jugular vein, for which his indications are few. Röpke ("A. of O.," Oct., 1896; "J. L.," 225) describes a case of *Pyæmia after Acute Suppuration*, which was cured by mastoid operation; as [also Rimini ("Trieste Med. Soc.," March 24, 1896; "J. L.," 102). *Thrombosis of the Lateral Sinus* has been successfully treated by operation in a number of cases, including those of Ridley ("B. M. J.," Nov. 21, 1896; "J. L.," 102), Adams ("Am. Ot. Soc.," "J. L.," 91), Dench ("Am. Ot. Soc.," "J. L.," 91), Eulenstein ("A. of O.," April, 1877; "J. L.," 472), etc. Alderton advises *Ligature of the Jugular* if there is much disease of the sinus wall ("Am. Ot. Soc.," "J. L.," 512). *Pyæmic Symptoms arising from Cholesteatoma*, and cured by operation, were described by Politzer ("Aust. Ot. Soc.," "J. L.," 251). *Hysterical Symptoms* in the subject of double suppurative otitis simulated septic complications in a case of Furet's ("Par. Soc.," "J. L.," 119).

EXTRA-DURAL ABSCESS.—In a case in which the mastoid operation had been performed, Urbantschitsch poured *Iodoform Emulsion* into the opening daily ("Aust. Ot. Soc.," "J. L.," 255), with the result that the extra-dural pus gradually diminished in quantity, and disappeared. He narrates several other similar cases. A case of *Extra-dural Abscess from Acute Empyema of the Mastoid Antrum* is narrated by Hennebert ("Belg. Soc.," "J. L.," 555).

CEREBRAL ABSCESS.—*Following Acute Suppuration.*—This was seen by Gorham Bacon ("Am. Ot. Soc.," "J. L.," 136). Cases of *Temporo-sphenoidal Abscess* have been successfully operated on by Bronner ("B. M. J.," Aug. 21, 1897; "J. L.," 578), Milligan ("J. L.," 598), Barling ("B. M. J.," June 12, 1897; "J. L.," 576), Cotterell ("Scott. Med. and Surg. Journ.," April, 1897), Gorham Bacon ("Am. Ot. Soc.," "J. L.," 133), and Myles ("Am. Ot. Soc.," "J. L.," 134) respectively, the patient in the last case being only seven years of age.

CEREBELLAR ABSCESS.—In a case of Barling's ("B. M. J.," June 12, 1897; "J. L.," 576) one abscess was successfully evacuated, but after an interval the patient died from the effect of a second abscess. Secker Walker ("B. M. J.," March 6, 1897; "J. L.," 226) describes a case in which the cerebellum had to be opened several times, with ultimate recovery. (Possible multiplicity of abscesses has always to be kept in mind.)

OTITIC MENINGITIS.—Barr ("Glasgow Med. Journ.," "J. L.," 344) gives an admirable account of a case in which infection of the meninges took place *through the Labyrinth* and internal auditory meatus. In a case of Kuhn's there was the unusual symptom of *Aphasia*, suggesting cerebral abscess ("A. of O.," Jan., 1897; "J. L.," 406). Dench brought

about a cure by operation in a case of meningitis resulting from old-standing post-typhoid otitis.

In a complicated case under the care of Pooley ("Am. Ot. Soc.," "J. L.," 134), there were present *Mastoiditis*, *Cerebral Abscess*, *Lateral Sinus Thrombosis*, and *Optic Neuritis*.

The *Diagnostic Value of Lumbar Puncture* is by Leutert ("Munich Med. Woch.," Feb. 23—March 2, 1897; "J. L.," 341) considered very slight, and can only differentiate between sinus thrombosis and meningitis. It is not free from danger.

Statistics of the Occurrence of Intracranial Otitis Disease in 40,073 general *post-mortem* examinations have been analyzed with studious care by Prof. Gruber ("Aust. Ot. Soc.," "J. L.," 561).

LABYRINTH, AUDITORY NERVE, ETC.—There is a *Sound-conducting Portion of the Labyrinth*, and Cheatle reminds us that this should include everything up to the hair cells of the auditory nerve, where the percipient portion proper begins ("A. of O.," April, 1897; "J. L.," 472). The *Etiology of Disease of the Sound-perceiving Apparatus* is made the subject of an extensive investigation by Alt ("Aust. Ot. Soc.," "J. L.," 627) in Gruber's clinic. The preponderance (14·8 per cent.) of "trade noises" is striking, and the 30 per cent. of "unknown cause" will not surprise the experienced. Among interesting cases recorded are those of *Complete Deafness from Mumps* by Alt ("Aust. Ot. Soc.," "J. L.," 79) and Lack, ("B. L. R. A."); *Traumatic Hæmorrhage into Labyrinth* by Kaufmann ("Aust. Ot. Soc.," "J. L.," 82); *Hæmorrhage into Labyrinth from Nephritis* by Alt ("Aust. Ot. Soc.," "J. L.," 126). *Syphilitic Disease of the Labyrinth* is discussed by Crockett ("Boston Med. Surg. Journ.," Feb. 11, 1897; "J. L.," 345) and Hennebert ("Belg. Soc.," "J. L.," 552), the latter pointing out the two clinical forms—the slow chronic and the acute apoplectic. Halinger ("Am. Otol.," etc., May, 1897; "J. L.," 526) narrates several *Cases of Labyrinthine Disease*, chiefly traumatic in origin. Botey's proposal to treat labyrinthine vertigo by *Puncture through the Fenestra Rotunda* ("Span. Cong.," "J. L.," 77) is combatted by Forns ("Ann. des Mal.," March, 1897; "J. L.," 289), who points out that the means employed must damage cochlear structures. Myles describes *Simulation of Labyrinthine Disease* by adhesions in the pharynx round the Eustachian tube, vertigo being produced ("Am. Ot. Soc.," "J. L.," 512). A typical case of *Hysterical Deafness* is narrated by Eeman ("Belg. Soc.," "J. L.," 554). *Simultaneous Acute Neuritis of the Acoustic, Facial, and Trigeminal Nerves* occurred in a case reported by Kaufmann ("Aust. Ot. Soc.," "J. L.," 128), and which Politzer suggested might be of rheumatic origin. Gruber's case of *Rheumatic Paralysis of Facial and Trigeminal* is comparable to this ("Aust. Ot. Soc.," "J. L.," 127).

DEAF-MUTISM.—Love ("J. L.," 593) has contributed a valuable article on the *Modern Aspects of Deaf-Mutism*, in which he advocates some rather revolutionary measures for the prevention of deaf-mutism. Sendziak ("J. L.," 173) indicates the call for *Treatment by the Removal of Adenoids*, which is sometimes curative. Alvarez reports *Recovery of Hearing in a Case of Deaf-Mutism* ("Span. Cong.," "J. L.," 123); and

Hamon du Fougeray, in a note on the *Lesions of the Ear, Nose, and Pharynx in a Number of Deaf Mutes* ("Span. Cong.," "J. L.," 123) gives interesting and encouraging results. The value of the *Acoustic Exercises* advocated by Urbantschitsch is enforced by Goldstein ("Laryngoscope," June, 1897; "J. L.," 473) and Muralt ("Correspl. für Schweizer Aerzte," Feb. 1, 1897; "J. L.," 291).

MALIGNANT DISEASE OF THE ORGANS OF HEARING. — Sandford ("B. L. R. A.," "J. L.," 187) and Compaired ("Span. Cong.," "J. L.," 198) report cases of *Epithelioma of the Auricle* treated by amputation. The latter recommends the routine employment of chlorate of potash powder in the after-dressing. *Primary Epithelioma of the Tympanum* developed in a case of chronic suppuration of the middle ear under the care of Du Fougeray ("Ann. des Mal.," Aug., 1897; "J. L.," 709). Operation and histological examination were carried out, but unfortunately no autopsy in this important and instructive case was permitted. Hogg gives a case of *Sarcoma of the Base of the Skull involving the Ear* ("Austral. Med. Gaz.," July 20, 1896; "J. L.," 101).

TINNITUS AURIUM.—Gowers, in the Bradshaw Lecture, dealt with *Subjective Sensations of Sound* ("J. L.," 267), chiefly as they present themselves to the physician. This aspect is of the greatest interest to the aurist, who will find much new and suggestive instruction. Dundas Grant ("Clin. Journ.," Feb. 10, 1897; "J. L.," 405) deals with *Tinnitus Aurium* from the ordinary otological standpoint. Randall, in some observations on *Objective and Subjective Tinnitus, Aneurysmal, Anæmic, and Muscular*, dwells on the frequency of anæmia as a cause ("Am. Ot. Soc.," "J. L.," 139). Grant showed a case of *Intermittent Objective Clicking* ("B. L. R. A.," "J. L.," 497).

VERTIGO.—Urbantschitsch has published some complicated investigations on *Vertigo and Apparent Movement*, the latter tested by a clock-face apparatus ("Aust. Ot. Soc.," "J. L.," 559). Blake ("Boston Med. Surg. Journ.," July 1, 1897; "J. L.," 577) draws attention to *Intratympanic Disease* as a cause of vertigo, an association which ought to be well recognized.

INJURIES: MEMBRANA TYMPANI.—The *Rupture of the Membrane from Hanging* was discussed last year by Lannois. Lincoln ("J. L.," 103) suggests that it is due to the driving of the condyle of the mandible against the floor and anterior wall of the meatus. Colles describes a case of rupture of the membrane from *Violent Aerial Concussion* ("Am. M. S. B.," Dec. 5, 1896; "J. L.," 99); Somers one of *Traumatic Perforation* ("Philadelph. Policlin.," Mar. 6, 1897; "J. L.," 347) by a piece of bone employed by the patient for the paracentesis of his own ear. Köbel ("Deahna's Festschrift," Mar. 6, 1897; "J. L.," 293) discusses some of the medico-legal aspects of *Injuries to the Tympanic Membrane*.

INJURIES: EXTERNAL MEATUS.—*Fracture of the Meatus from a Fall on the Chin* is reported by Randell ("Philad. Policlin.," May 29, 1897; "J. L.," 528), and penetration of the tympanum by a *Revolver Shot*

by Urbantschitsch ("Aust. Ot. Soc.," "J. L.," 255). Gruber reports a fatal case of *Fracture of the Temporal Bone from a Fall on the Head* ("Aust. Ot. Soc.," "J. L.," 252).

GENERAL AND OTHER DISEASES IN RELATION TO THE EAR.—Gellé (fils) ("Fr. Soc.," "J. L.," 506) and Buck ("Am. Ot. Soc.," "J. L.," 511) describe *Aural Affections arising from Gout*, and Eagleton the *Aural Complications of Influenza* ("Am. Ot. Soc.," "J. L.," 511), Kaufmann noting attacks of *Otalgia during Influenza Epidemics* ("Aust. Ot. Soc.," "J. L.," 129).

Laurens discusses the *Relation between Aural and Ocular Disease* ("Paris Thesis," "J. L.," 346), especially the reflex or infective changes in the eye induced by disease of the ear. Theobald ("Am. Ot. Soc.," "J. L.," 139) states having suffered from *Tinnitus due to Eye-strain from Myopia*.

MISCELLANEOUS.—Zwaardemaker ("A. of O.," Oct., 1896; "J. L.," 227) discusses *Acuteness of Hearing for Acoustic Railway Signals*, and Claoué, *Aural Affections and Fitness for Military Service* ("Ann. des Mal.," July, 1897; "J. L.," 708). Verdoz ("Span. Con.," "J. L.," 124) describes a curious case of *Auditory Allochiria and Extra-cranial Tinnitus. Paralysis of the Chorda Tympani from Cocaine* introduced into the ear was observed by Alderton ("Ann. of Otol.," Feb., 1897; "J. L.," 344). Bonnier attributes the sensation of a shock in the ear and sudden dulness of hearing when singing low notes, in one of his cases, to *Tympano-Spasm*, an exaggeration of the normal reflex contraction of the tensor tympani ("Par. Soc.," "J. L.," 122). *Hearing by Means of Cicatrix in the Skull*, following trephining, has been tested by Courtade ("Par. Soc.," "J. L.," 120), and found wanting. The *True Electrical Sound Reaction* is studied by Constantinoff-Tschernoff (Geneva, 1896, "J. L.," 294); but he only gets it in cases of special hypersensitiveness of the auditory nerve, and, curiously, with the greatest frequency in the subjects of hereditary syphilitic disease of the internal ear.

PHYSIOLOGY.—*The Function of the Cochlea*, as deduced from the history of its development, has been most ably studied by Hammerschlag ("Aus. Ot. Soc.," "J. L.," 629), who finds reason to confirm the received views as to the diagnostic value of tests for the hearing of deep tones. The *Electrical Variation caused in the Auditory Nerve by Sound* is found by Beauregard and Dupuy to be greater for high than for low tones ("Arch. Inter.," July, Aug., 1896; "J. L.," 97). Bonnier discusses *Stere-acoustic Hearing* ("Par. Soc.," "J. L.," 121), and Angiéras, *Monaural and Binaural Perception of Direction of Sound* ("Fr. Soc.," "J. L.," 629).

ANATOMY.—*Points in Anatomy bearing on Operation* were demonstrated at Montreal by Lee Morse ("B. M. J.," Nov. 27, 1897, "J. L.," 624), who, on anatomical grounds, advocates Schwartze's in preference to Stacke's operation, whenever permissible. Politzer ("Aus. Ot. Soc.," "J. L.," 254) has shown specimens of *Rare Anatomical Varieties*. The *Anatomy and Development of the Lower Part of the Labyrinth*, and

especially of the cochlear cæcum, have been studied by Alexander ("Aust. Ot. Soc.," "J. L.," 556) on some most beautiful preparations made by him in the Anatomical Institute of Vienna. A method of *Injecting the Petrous Bone with Mercury* has been devised by Brühl ("Aust. Ot. Soc.," "J. L.," 86). The bone may afterwards be rendered transparent by Katz's method.

The following works on Otological subjects have been reviewed in the volume for 1897.

CONSTANTINOFF-TSCHERNOFF. "Clinical Researches on the Electrical Sound Reaction." Brochure. Geneva: Dubois, 1896.

DALBY, SIR WM. "Contributions to Aural Surgery." London: J. & A. Churchill, 1896.

BONNIER, P. "L'Oreille: I. Anatomie; II. Physiologie — Physiogénie et Mécanisme; III. Physiologie—les Fonctions." Paris: Masson & Cie.

BARR, T. "Manual of Diseases of the Ear, including those of the Nose and Throat in relation to the Ear, for the use of Students and Practitioners of Medicine." Glasgow: Maclehose & Sons, 1896.

LOVE, J. K. "Deaf-mutism: a Clinical and Pathological Study." Glasgow: Maclehose & Sons, 1896.

Manhattan Eye and Ear Hospital Reports. Jan., 1897. New York: Knickerbocker Press.

ABBREVIATIONS.

"J. L."—"Journal of Laryngology, Rhinology, and Otology," Vol. XII., the figures indicating the page.

"Am. M. S. B."—"American Medical and Surgical Bulletin."

"Boll."—"Bolletino delle Malattie dell' Orecchio," etc.

"Am. Ot. Soc."—American Otological Society.

"Flor. Cong."—The Fifth International Congress of Otology, Florence, September, 1895.

"Fr. Soc."—The French Society of Laryngology and Otology.

"L."—"Lancet."

"A. of O."—"Archives of Otology."

"Aust. Ot. Soc."—Austrian Otological Society.

"Hung. O. and L. Soc."—Hungarian Otological and Laryngological Society.

"Dutch Soc."—Dutch Society of Laryngology, Rhinology, and Otology.

"M. f. O."—"Monatschrift für Ohrenheilkunde."

"Belg. Soc."—Belgian Society of Otology and Laryngology.

"Par. Soc."—Parisian Society of Otology and Laryngology.

"Germ. O. S."—German Otological Society.

"Arch. Ital."—"Archivii Italiano di Otologia."

"Ann. des Mal."—"Annales des Maladies de l'Oreille, de la Gorge," etc.

"B. L. R. A."—British Laryngological, etc., Association.

"Arch. Inter."—"Archives Internationales de Laryngologie," etc.

"Am. L. R. O. Soc."—American Laryngological, Rhinological, and Otological Society.

REVIEWS.

Heymann. — *Handbuch der Laryngologie und Rhinologie.* Lief. 10, 11, 12.
(Wien: Hölder. 1897.)

PROBABLY the papers which will be read with most interest in the above numbers are one on "Atrophic Rhinitis," by Dr. Krieg, and another on "Laryngeal Therapeutics," by the veteran laryngologist, Prof. Stoerk.

Dr. Krieg is of opinion that the riddle as to the true nature of ozæna has been at last solved by the bacteriological observations of Abel. This observer announced in 1893, without knowing the previous literature of the subject, his discovery of the bacillus mucosus, which he regarded as the specific micro-organism of ozæna. He had studied it in pure cultures, and made clear the distinctions between it and Friedländer's bacillus, with which it had been identified by Thost and Hajek. In 1895 Abel published further observations on this subject. He named the organism "bacillus mucosus" on account of its forming mucous clumps in pure cultures. He found it to grow best on agar, and that if pure it does not form any stinking product. The bacillus is found most abundantly in the fluid mucus on the under surface of the crusts. This mucus has no smell when first secreted, and contains nearly pure cultures of the bacillus. Abel found this bacillus in a hundred cases which he examined, and in every stage of the disease, whether there was hypertrophy or atrophy, or whether there was fœtor present or not.

Strübing and Abel, who have worked out this subject together, define ozæna as a specific inflammatory affection with crust formation, beginning mostly in the nose, more rarely in the naso-pharynx, and caused by the presence of a specific bacillus, which gives rise to catarrhal symptoms, at first leading to hypertrophy and later to atrophy of the mucous membrane. The atrophy is caused partly through the pressure of the crusts, and partly by the irritation of the poisonous products of the bacilli. The fœtor is not an essential part of the disease, but arises from the action of the ordinary bacteria of decomposition breeding in the crusts. A general dyscrasia is not necessary to the origin of the disease, though it may favour it, and the healthiest of people may be attacked.

Dr. Krieg accepts all the conclusions of Strübing and Abel, and maintains that any theory inconsistent with them must fall to the ground.

One naturally asks, how far has this bacteriological discovery helped our therapeutics? Unfortunately, only very little, or not at all, must be the answer. Almost every germicide has been employed at some time in treating this disease, with the view of destroying the fœtor. Abel has himself made many experiments with this class of remedies, but without much success. The irregularities of the nasal cavities and sinuses, the sensitiveness of the nasal mucous membrane to irritating substances, and the powers of resistance of the bacillus itself, all make the attainment of a cure very difficult.

Dr. Krieg trusts entirely to Gottstein's tampons in treating ozæna, which he introduces into the nose without the help of any instrument, by simply twisting the cotton-wool into a stiff, stout wick of the length and thickness of the forefinger. This wick is smeared with equal parts of white precipitate ointment and vaseline, and then introduced with a screwing movement into the nose. Such a tampon is worn for four hours in each nostril alternately, and is sufficient to keep the nose clean and free of odour without the use of any douching. This line of treatment he has seen result in a complete cure after being carried out for some years.

One turns with peculiar pleasure to the article on the "General Therapeutics and Methods of Operations in Diseases of the Larynx," by Prof. Stoerk. The article is largely autobiographical. We are taken back to the birth of laryngology. He tells us of what was probably the first attempt at intralaryngeal surgery with the aid of the laryngoscope, when he ventured to cauterize an ulcer of the larynx with solid nitrate of silver, and to his astonishment the dreaded spasm of the glottis did not occur. He describes the development of laryngeal instruments down to the present time, and shows how the snares and guillotines of the early days have been displaced, since the introduction of cocaine, by an instrument of greater precision—the sharp, powerful cutting forceps.

In regard to the climatic treatment of laryngeal affections, Dr. Stoerk is largely a sceptic. No physician, he maintains, can say beforehand what special climate will benefit a particular case of laryngeal disease. It is not the air which the patient breathes that does good, but the removal from his usual surroundings and the change in his whole manner of living. That this is so is shown by the conflicting opinions as to the best climate for laryngeal affections. Formerly high altitudes were regarded as unsuitable, but now many recommend them. In tubercular cases it is not the air which does good, but the improvement in the general health. Dr. Stoerk thinks that syphilitic patients subject to frequent catarrhs are much benefited by going south, though they are very liable to recurrences if they come north again.

The position of Prof. Stoerk, as probably the most experienced of laryngologists now living, makes the article of peculiar interest and value to all engaged in the treatment of throat affections.

Dr. Victor Lange writes on "Deformities of the Nasal Septum." Dividing these into (1) deflections, (2) outgrowths, and (3) fractures, he proceeds to describe each form in detail, and then passes on to the difficult question of their etiology. He confesses that a large number of cases cannot yet be accounted for. It is now recognized that even in the new-born we may meet with septal deviation dating from intra-uterine life, and suggesting hereditary transmission, or some anomaly of development. Rickets as a cause remains unproved, and the influence of a high-arched palate is doubtful. That traumatism is the most fruitful cause of septal deformities is generally admitted. Next in frequency comes the physiological form, or those due to anomalies of growth. Whether the primary cause in these instances lies in the too rapid growth of the septum, or the too slow growth of the surrounding bony structures of the nasal cavities, remains an open question.

In regard to prognosis, Dr. Lange thinks that while we can promise a distinct improvement in certain cases, as a result of operation, in many others the prognosis is doubtful or absolutely bad.

Two rules he lays down for operating in these cases. Don't operate unless you can promise your patient a successful result, and never attack a deformity of the septum, however great, unless it is causing symptoms.

Dr. Lange gives minute details of the many methods which have been employed in the treatment of septal deformities, but unfortunately does not discuss their relative values, or give the indications for choosing one in preference to another. This appears to us a serious defect in an otherwise excellent article.

The above numbers also contain two exhaustive articles on the "Methods of Examining the Larynx and Trachea," and on the "Symptomatology of Diseases of the Larynx and Trachea." The former is from the pen of Prof. Fraenkel, the latter by Prof. Schech. In both instances the names of the authors are a sufficient guarantee of thorough and reliable work.

Middlemass Hunt.

Power, D'Arcy.—*William Harvey.* ("Masters of Medicine," No. 2.) By D'ARCY POWER, F.S.A., F.R.C.S. (Published by T. Fisher Unwin, Paternoster Square, London. 1897.) Price 3s. 6d.

THE bibliography before us is well written, and clear and easy in style; partly from this and partly from the great interest derived from a most careful use of the material at the disposal of the editor, one's interest is kept up throughout the volume. The series is one which it is incumbent upon all who love their profession and revere their great dead, to buy, and we feel convinced that the book will be a companion to many. Harvey's life after his preliminary education was finished is full of interest; his stay at Padua being of great importance in reference to his own works, the origin of which may be traced, in part, to that period of his life. The description of the foreign universities in his times is retold in an interesting way, and it is just these light touches which serve to throw up more prominently the more solid portions. Another example of this is that which portrays the performance of the public and private "anatomies." His connection with St. Bartholomew's Hospital, with James I. and Charles I., and his loyalty to the Crown, receive due attention. But one is probably more struck with the letter of Dr. Ent, which forms the preface to Harvey's book on development of animals. The latter portion of this life is devoted to an excellent examination of Harvey's works, and from it few will go without instruction, and none without benefit.

CORRECTION.

DR. C. H. KNIGHT draws our attention to an error on page 623, Vol. XII., by which a "shoe-hook" has been magnified into a "shoe-horn," an article, as he truly points out, which could scarcely obtain entrance to a human larynx. As a matter of fact, the error was passed, as a "shoe-hook" is a word not in vogue on this side, and a shoe-horn might, for aught we know, be used in a different sense on the other side.

We tender our sincere thanks to Dr. Knight for drawing our attention to the error, and our apologies for its committal.—MANAGING SUB-EDITOR.

REPORTS OF THE MEDICAL CONGRESS, ETC.

REPORTS of the laryngological sections of the Moscow Medical Congress and British Medical Association, Montreal, are at present appearing in our journal. For the latter we have to thank Dr. Permewan, and for the former the editors are specially indebted to Dr. Arthur Hutchison. The meeting at Moscow presented difficulties, and it was with a considerable amount of trouble that these reports were obtained. We have to thank those gentlemen who took part in the discussions for sending papers or abstracts, but without Dr. Hutchison's aid the reports could not have been placed at the disposal of our readers. Dr. Dundas Grant is editing the papers bearing upon otology, while Dr. Macintyre is responsible for the reports in the laryngological section.

THE "LARYNGOSCOPE"

has had so large an amount of success in America that Messrs. J. WRIGHT & CO., of Bristol, have undertaken an English edition, which is placed under the able editorship of Dr. StClair Thomson, who, with the needs of the general physician before him, proposes to make this journal meet their requirements. We wish him success in the interests of the specialty.

APPOINTMENTS.

RICHARD LAKE, F.R.C.S., has been appointed Assistant Surgeon to the Royal Ear Hospital, Frith Street, Soho, London.

P. MACLEOD YEARSLEY, F.R.C.S., has been appointed Assistant Surgeon to the Royal Ear Hospital, Frith Street, Soho, London.

THE
JOURNAL OF LARYNGOLOGY,
RHINOLOGY, AND OTOTOLOGY.

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A RECURRENT MEMBRANOUS PHARYNGITIS OF NINETEEN YEARS' DURATION.

By JOHN MIDDLEMASS HUNT, M.B.,

Laryngologist to the Liverpool Royal Infirmary.

IN the report of the proceedings of the Moscow International Congress, which appeared in the November number of the JOURNAL OF LARYNGOLOGY, there is a brief reference to a case which I related during the discussion on Dr. Rosenberg's case of laryngitis fibrinosa. My case was one in which a fibrinous membrane kept recurring on the pharynx and epiglottis for a period of fifteen years (I find it was really over nineteen years), and which, though I had not been able to prove it, I suspected to be produced artificially. Since the meeting of the Congress, certain facts have come to my knowledge which throw light on this otherwise obscure case and justify its being more fully reported.

I first saw the patient, in consultation with her own doctor, on March 10th, 1896, and got from him the following history:—

The patient, a middle-aged, unmarried lady, had suffered from a recurrent membranous sore throat for about eighteen years. During that period the doctor had been in more or less constant attendance, and so far as he knew she had never been free of her throat trouble all those years except for four months, when confined to bed through an injury to her foot. Though enjoying good health on the whole, and able to get about indoors, she had not been out of the house for twenty years. The description of her throat ailment, as given by the doctor, was that at intervals of ten to fourteen days she had an acute sore throat, always limited to the left side, and accompanied by a membranous exudation extending over the tonsil and side of the pharynx. In one or two weeks the membrane gradually disappeared, but no sooner had it entirely cleared up than the whole process began again. The case had been

seen by more than one consultant, and many remedies had been tried without any benefit.

On examining the patient, who was a rather spare, sallow-complexioned woman, but did not appear ill, I found a thick white membrane extending over the left tonsil, the posterior fold of the palate, and the lateral wall of the pharynx. On using the laryngoscope the left half of the epiglottis on its posterior surface was seen to be also covered with membrane, but the membrane here was not continuous with that on the pharynx. The membrane was surrounded by an area of highly inflamed mucous membrane, and on removing a portion with forceps a raw and bleeding surface was left.

After concluding my examination I gave my opinion that the membrane was artificially produced, and I based my diagnosis on the following grounds :—(1) The duration of the disease despite all forms of treatment ; (2) its cessation for three or four months when the patient was confined to bed ; (3) the situation of the membrane on the left side of the pharynx and posterior surface of the epiglottis, the parts most easily reached in using a curved brush with the right hand ; and (4) that the membrane on the epiglottis was not continuous with that on the pharynx.

The patient, of course, denied that she made any application to her throat, and the doctor promised to follow up the idea I had suggested, and to discover, if possible, how the thing was done.

I had a portion of the membrane examined bacteriologically. It contained strepto- and staphylococci, but no Loeffler bacillus.

I heard nothing more of the case till June, this year, when I was again asked to see the patient. I was told there had been some improvement for a few weeks after I last saw her, but that things soon returned to the old way, and the regularly recurring attacks of membranous sore throat were going on as before. I found the same local conditions as on my previous examination, but the membrane did not cover so large an area, and the epiglottis was not involved. I also noticed a well-marked cicatrix on the lateral wall of the pharynx in the situation where the membrane usually formed. I was still of opinion that the membrane was artificially produced, and as the doctor had failed to get any clue as to how it was done, I suggested procuring from the chemist a list of all medicines he had supplied to the patient throughout her illness. The result of this inquiry I only heard since I referred to the case at the Moscow Congress. The doctor sent me word that he had now no doubt that my diagnosis was correct. He had found that for twenty years the patient had renewed at long intervals a prescription for liquor epispasticus, which he remembered to have written for her some months before the throat trouble began. He had not yet, however, summoned up courage to accuse her of deception.

I remember reading somewhere that French soldiers have been known, in order to escape duty, to produce an artificial membranous sore throat, difficult to distinguish from diphtheria, by rubbing in powdered cantharides with the finger.

I find a reference to a paper on this subject, by Dr. Perrin, in the "*Monatschrift für Ohrenheilkunde*" for February, 1896.

NOTES OF A CASE OF CARCINOMATOUS GROWTH IN THE LARYNX,

Preceded by Hoarseness of Twenty Years' Duration.

By BRUCE HAMILTON,

Clinical Assistant (Ear and Throat Department), Great Northern Central
Hospital.

G. D., a coachman, aged forty-one years, first came to consult me on 22nd November, 1896. Speaking in a hoarse whisper he related the following history of his case :—

For the last twenty years he had been afflicted with hoarseness, at times amounting to complete loss of voice. He should attribute the cause to exposure to cold winds, as considerable improvement in quality of the voice had attended any spell of warm weather, but with return of the winter months relapses were inevitable. At times the throat felt dry and hot. Cough, which always got worse in the winter, was usually accompanied by expectoration of a few pellets of mucus. He was a married man, with several healthy children; had not had syphilis or indulged in stimulants. Would I say whether his throat were affected with cancerous disease? His reason for making this request was that his mother had died of cancer of the breast, and he was beginning to feel anxious about himself.

In appearance he was a short, muscular man, of resolute bearing, with regular features and grey hair. On examination of his chest both heart and lungs were found to be healthy. The mucous membrane of nose and pharynx was normal. A careful inspection and palpation of the neck provoked the remark that the part had frequently been swollen at the sides, but no enlargement of the glands or other swelling was detected.

With the laryngoscopic mirror an image of the interior of the larynx and trachea was readily seen. Nowhere was there a particle of new growth; but the lining membrane throughout exhibited an extreme degree of hyperæmia, affecting equally the two sides and shading away toward the epiglottis and ary-epiglottic folds. The true vocal cords had quite lost their normal appearance; they looked shrunken and differed but little in colour from the surrounding parts. Mobility was not impaired. Superficial erosions were looked for, but not found. A special note was made of the "roomy" aspect of the laryngeal cavity. The case was diagnosed as one of simple chronic aryngitis of the atrophic type.

It was not until the 9th of June, 1897—that is to say, about six months and a half after his first visit—that the patient again called on me, when it was at once seen that some grave change in his condition had taken place. Inspiratory stridor was plainly audible, and speech was reduced to the merest whisper. He told me that he had continued to enjoy good health up to within three weeks back, when his voice left him and lumps appeared in his neck. This state of things lasted a fortnight, at the end of which he began to cough up bright red blood; and this alarming

symptom had been repeated several times a day during the past week. From his point of view hæmoptysis was the only new trouble, although there was undoubtedly great exacerbation of all old symptoms. At the moment he was complaining somewhat of shortness of breath and of a feeling of pressure on the throat. There was little or no actual pain, or any interference with the act of swallowing. He felt quite sure he was not losing flesh.

On examination of the neck, a hard, smooth, rounded, firmly fixed mass was felt, close to the left side of the thyroid cartilage; and, situated rather to the outer side of this, and distant from it about one inch, a second tumour, in size equal to that of a horse chestnut, prominent, immobile, and of stony hardness, was also detected. The skin over the tumours was freely movable. On the opposite side of the neck were several enlarged glands.

By means of the laryngoscope the anterior half, or more, of the glottis was seen to be occupied by a tumour, which apparently had attachment to the anterior end of the left vocal cord. A part of the growth, pearly white in colour, but touched here and there with bright red blood, lay directly in the mid-line, thereby reducing the breathing space to a small irregularly rounded opening, situated posteriorly. Definition of the cords was not possible. The left band, greatly enlarged, was the seat of ulceration along its inner margin; the right showed swelling and congestion. There was seen to be some slight movement of the right side, but none of the left. Below the rima a second swelling, of a somewhat deeper shade, protruded from the right posterior wall. Without any question the greater part of the cancer was occupying the site of the left vocal cord.

The patient accompanied me to the Great Northern Central Hospital, where Mr. W. R. H. Stewart kindly saw him and agreed with the diagnosis of malignant disease. Whilst attempting to stop some oozing of blood from the surface of the tumour a fragment of the growth was accidentally detached and withdrawn with the laryngeal brush; a microscopic examination was made by Dr. Freyberger, who declared the growth to be epitheliomatous. As Mr. Stewart considered the case not a suitable one for operation the patient returned to his native town of Rochester, and on the 12th of June was admitted to St. Bartholomew's Hospital (Rochester). I am indebted to Mr. W. V. Eaves of that institution for the following notes:—

"Laryngotomy had to be performed suddenly on June 20th. The operation afforded so much relief that at the end of a few days the patient was again able to breathe through his mouth with comparative comfort, and continued to do so up to the day of his death. Unfortunately the cervical glands grew rapidly to enormous size, suppurated, and broke down; incisions had to be made from time to time, but fever and supuration produced rapid wasting, the patient dying of septic pneumonia on the 7th of September." I visited him on three occasions during his residence in the hospital, but owing to enlargement and depression of the epiglottis, and the difficulty of getting the mouth sufficiently widely open to allow of the full use of the mirror, a satisfactory view of the interior of the larynx was not obtained.

Cases of malignant disease of the larynx are usually not considered to be of sufficient importance to call for publication, but one or two points in the foregoing example of the malady are of uncommon interest.

A favourable view of the case—founded chiefly, if not entirely, on the result of a laryngoscopic examination—was unhesitatingly taken and freely expressed; had the history and the symptoms alone been considered, it is not altogether unlikely that a graver prognosis might have been given. In the absence of such examination the fatal termination would be attributable to sudden increase in severity of the disease which had given rise to loss of voice; with it, in the light of present-day teaching, the patient is said to suffer, not from one but from two diseases of the larynx, running consecutively, the one benign in its action, the other malignant. A case bearing close resemblance to the above has been briefly described by De Havilland Hall¹ in an article entitled, "Hoarseness in Life Assurance," and no doubt other cases have been recorded.

An important question was the possibility of a causal relationship existing between the laryngitis present at the primary examination and the subsequent development of a malignant tumour. Remembering the fact that a careful search of the laryngeal cavity had been made with a view to determine the cause of the aphonia, with the result already made known, one may be permitted to say, with confidence, that hyperæmia was the only visible pathological condition present in the larynx in November, 1896. In this particular case, then, no growth of tumour had preceded the onset of inflammation; on the contrary, it is extremely probable that inflammation extending over a period of twenty years immediately preceded the occurrence of tumour.

That chronic inflammation of the larynx has any tendency to take on malignant action is not generally admitted to be the case. In text-books on laryngology, prognosis in the case of simple, as distinguished from tubercular and syphilitic laryngitis, is said to be invariably favourable, the only serious complication to be feared being œdema, followed by suppuration and necrosis of the cartilages. But when the question as to causation of cancer in the larynx is raised, great diversity of opinion is apparent. We are told by some laryngologists that chronic catarrh (with its invariably favourable termination) is the commonest of all causes of cancer in the larynx. It is not often, however, that laryngoscopy is employed to demonstrate the presence of pre-cancerous inflammation. David Newman,² of Glasgow, believes chronic catarrh of the larynx to be one of the most fruitful causes of malignant growth in the larynx; but in the detailed accounts of cases of malignant disease of the larynx which he gives, no special mention is made of the employment of the laryngoscope previous to the occasion of the actual discovery of a tumour.

The following statement appears in McBride's well-known text-book: "That chronic congestion of the larynx, more or less confined to the side upon which the neoplasm afterwards appears, may precede cancer, I have myself seen."³ When congestion or hyperæmia of the

¹ "Brit. Med. Journ.," Vol. I., Feb. 10th, 1894.

² "Malignant Disease of the Throat and Nose," p. 80.

³ "Diseases of the Throat and Nose," p. 178.

whole or a part of the larynx has become *chronic*, how is it to be distinguished from the disease known as chronic laryngitis?

Writing in Allbutt's "System of Medicine," Sir Felix Semon, than whom no one is better qualified to speak authoritatively on this subject, is inclined to regard the commonly assigned causes—heredity, excessive use of the voice, and long-continued local irritation—as having no influence whatever towards its production. He says: "It is hardly ever possible to assign the cause of the occurrence of malignant disease of the larynx."¹

As Lennox Browne and some other specialists hold to the opinion that irritation may be the exciting cause of cancer, it may be well to state here that during the interval of time that elapsed between the first and second examination of the patient, no instrument or chemical came in contact with the interior of the larynx.

NOTICE.

AN INTERNATIONAL DIRECTORY OF LARYNGOLOGISTS AND OTOLOGISTS.

THE Managing Sub-Editor will be glad to receive the names and addresses of all Laryngologists, Rhinologists, and Otolologists for this Directory.

The Directory will be published June, 1898. It will contain the names and addresses of all the specialists obtainable (already several thousand).

Will be published under the auspices of the JOURNAL. Price and date of publication will be issued later.

Address: Managing Sub-Editor, care of REBMAN & CO., 11, Adam Street, London, W.C., England.

SOCIETIES' MEETINGS.

THE LARYNGOLOGICAL SOCIETY OF LONDON.

Ordinary Meeting, November 10th, 1897.

HENRY T. BUTLIN, Esq., F.R.C.S., *in the Chair.*

New Tracheotomy Tube for Permanent Use.

The designer, W. Heywood, a working jeweller, was introduced by Sir Felix Semon, and exhibited the instrument.

The main tube is similar to that of an ordinary tracheotomy tube, but has a small, easily removable metal box, fitting into the proximal end of the tube. The anterior wall of the box is replaced by a narrow metal

¹ "A System of Medicine," Vol. IV., p. 833.

bar, and hanging from the upper surface of the box, a little way from its anterior extremity, is a light metal flap, so inclined that a current of inspired air easily passes through the box, but on expiration the metal flap is driven forward, and effectually acts as a "stop" to expiration through the tube. Hence the patient can (in this case suffering from abductor paralysis) phonate quite easily without placing his finger on the proximal end of the tube, as is necessary in the ordinary patterns. Moreover, the little box is very easily detached and cleaned, and, having a larger and freer lumen, is much less liable to become obstructed by mucus than the common tracheotomy tubes.

The inventor acknowledged that he derived the idea of the instrument from Mr. de Santi's tube, but considered the new design presented advantages over any previously invented tracheotomy tubes.

MR. DE SANTI remarked that the new tracheotomy tube for permanent use now shown was practically a modification of his own, shown some time ago at the Society's meeting. He, however, considered that the present modification was a distinct gain, because it gave more breathing space and was far easier to clean than his own tube.

Dr. DONELAN showed a *Syringe for making Submucous Injections in Laryngeal Tuberculosis*.

His attention was recalled to this treatment by Dr. Chappell's paper, read before the New York Laryngological Society in 1895, reporting a number of successes with this method. The exhibitor since that time tried the injections in seven cases of advanced laryngeal tuberculosis which had proved refractory to curetting and lactic acid, and was able to speak most favourably of the effect of the injections on the local condition. The syringe consists of a steel barrel and tube mounted on a modified "pistol handle." The tube has a rectangular laryngeal curve, and at the distal end a rather coarse thread, capable of carrying safely nozzles varying in length according to the depth at which it is desired to make the injections. Each nozzle terminates in a rounded shoulder, from which a hollow needle projects a quarter of an inch, that being the depth of puncture found necessary to insure retention of the fluid. As it was found that the creasote speedily rendered the piston leathers useless, these were replaced in this syringe by a "plunger," fitting closely to the interior of the barrel and graduated in minims. The whole instrument and its case are, therefore, sterilizable.

The syringe is filled by pouring guaiacol into the barrel until it is full and the oil begins to drip from the needle. The plunger is replaced and compressed until only the desired dose is left in the barrel. The needle is then guided by the laryngoscope into the previously cocaineized larynx, and inserted in the site selected. Then the thumb is placed in the button of the plunger, which is driven quickly home. The needle should not be withdrawn if possible for a moment or two longer.

In the cases referred to the injections were followed by remarkably little local reaction, which was always controlled by sucking ice. The most remarkable immediate effect of this treatment was the relief of dysphagia, especially after two or three injections.

In another case an obstinate tubercular ulcer in the interarytenoid fold was quite cured. The injections were made at intervals of from four days to a week. The dose was generally one minim of pure guaiacol, and never more than two minims in obstinate cases. Besides the injections the most important part of the treatment was the frequent cleansing of the larynx by antiseptic and other sprays, most frequently an oily solution of guaiacol.

Dr. J. B. BALL. *Case of Fibro-sarcoma of the Nasal Septum.*

Emily P., aged twenty-five, seen August 14th, 1897, complaining of a stoppage of the nose. About three or four months previously she began to suffer from repeated attacks of epistaxis. The bleeding was from the left nostril at first, but subsequently from both nostrils. During the last two or three months the nose gradually became more and more obstructed, first the left side, then the right, but the bleeding was less frequent and severe than before. She had experienced no pain.

Examination showed each passage to be almost completely obstructed by a smooth pinkish mass presenting in the upper part of each vestibule. Its attachment was made out to be to the cartilaginous septum. The posterior choanæ were found to be free, and the growth could not be felt with the finger passed into the posterior nares.

A small portion of the tumour was removed with a snare from the left side for microscopical examination. Its removal was followed by brisk hæmorrhage. The Clinical Research Association's report was that the growth consisted of young connective tissue, and might be termed a fibro-sarcoma.

On August 24th the growth was removed by Mr. Swinford Edwards. For this purpose the left ala nasi was detached and turned up, and the growth was easily removed together with a certain amount of the cartilaginous septum. The greater part of the cartilage had, however, been absorbed. The tumour was about the size of a walnut, and presented a constriction towards the right side marking the point where it had grown through the septum.

The patient was shown, together with the tumour and microscopical specimen.

Mr. MORLEY AGAR. *Tumour of Tongue—Patient and Specimen.*

The tumour was removed from the right posterior dorsum of tongue in a lad aged fifteen. It was readily enucleated, and followed by very little hæmorrhage. The growth had apparently only taken one week to attain its size.

Mr. BUTLIN suggested that it was a fibroma or fibro-sarcoma, and noticed a thickening around the area of removal which was suspicious of its sarcomatous nature. At his suggestion the specimen was submitted to the Morbid Growths Committee for examination.

Mr. W. G. SPENCER. *Separation of Old-standing Adhesion of the Soft Palate to the Pharynx.*

The patient, a middle-aged woman, had suffered severely from tertiary syphilis, and the soft palate had become completely united to the back

wall of the pharynx. As a result of this she had great pain in the ears and over the mastoid processes, as well as collections of muco-pus which she could not expel from the nose. Antisymphilitic remedies had ceased to give any relief, and so severe and continuous was the pain that her general health and spirits had become impaired.

When she was anæsthetized, the mouth gagged open, and the tongue depressed, the respiration became bad or stopped. Therefore the operation had to be carried out with only a partially opened mouth. The head was hanging low. The line of union between the palate and pharyngeal wall was first incised by an angular cleft palate knife, when it was found that the whole of the naso-pharynx above the palate was filled by dense fibrous tissue. This was penetrated from the mouth by using cleft palate raspatories, and from the nose by thrusting in a strong pair of nasal dilators. The soft palate was after this drawn forwards and fixed by two silk sutures to the muco-periosteum of the hard palate. There was free venous hæmorrhage during and after the operation, but the nose and naso-pharynx could not be plugged because the soft palate largely obstructed respiration through the mouth. The hæmorrhage stopped the next day. The sutures holding the soft palate forwards cut out in about a week. The separation has since then been kept up by the patient passing full-sized nasal bougies, and by stretching at intervals of a fortnight the soft palate by using an aneurysm needle under cocaine. The patient has lost the pain in the ears, and can breathe easily through and blow the nose. She is now in very good health, and is cheerful. The opening will admit two fingers when the palate is stretched; the latter is mobile. There is still a small muco-purulent discharge.

It is generally held that the occurrence of these adhesions cannot be prevented by any of the contrivances which have been proposed, and that it is useless to separate them when formed, owing to the tendency to recurrence. This opinion is no doubt correct as a rule, and Mr. Spencer had not heard of a successful case. But this patient is brought forward to show that, granted sufficient indications, the operation may be undertaken with some hope of affording relief. It will doubtless be necessary to keep up the dilatation in the present case for some time.

No better way of operating seems to have been proposed. Measures which entail the cutting or partial excision of the soft palate would be likely to set up fresh trouble, owing to the passage of food into the nostrils.

Mr. DE SANTI congratulated Mr. Spencer on his excellent result. He had a similar case under observation where the patient had severe pain in the ear and mastoid; he intended to try Mr. Spencer's method of operation.

Dr. WILLIAM HILL. *Papilloma of the Tonsil.*

The author showed two tonsils, on the surface of each of which a papillary growth, about one-third of an inch in diameter, was seen. They had been removed from a female and male, aged twenty-one and twenty-two respectively, who were sufferers from chronic pharyngitis. Although these neoplasms were common enough on the palate and pillars of the

fauces, little information appeared to be obtainable of papillary growths springing from the surface of the faucial tonsils. It was suggested that these cases might, up to now, have been considered too trivial to be worth recording. A papilloma on the tonsil in a middle-aged person, however, might in certain circumstances be of much clinical significance.

Messrs. WINGRAVE and WAGGETT reported having met with cases similar to those described by Dr. Hill. In Mr. Wingrave's case the papilloma seemed to be attached to the base of a follicle.

Sir FELIX SEMON thought it would be of great interest if members would bring full reports of such cases, and expressed surprise that so many cases had been seen by members of the Society. Hitherto he had shared in the general belief that benign tumours of the tonsil were practically non-existent.

Mr. BUTLIN recalled two cases of papilloma of the tonsil, and agreed that it would be well to obtain full reports of any such cases occurring in future.

Dr. JOBSON HORNE remarked that he had met with these growths on the tonsils, and referred to notes of two cases. Case 1.—January 25th, 1894. Edward C., aged seventeen, with a history of a sore throat extending over six months. A papilloma of the size of a boot button, surface finely papillated, springing from the lower part of the left tonsil close to the junction of the anterior pillar with the base of the tongue. Both tonsils were hypertrophied and indurated. Case 2.—May 22nd, 1896. Sarah E., aged forty-eight, subject to sore throats for fifteen months. Follicular tonsillitis, follicles of right tonsil plugged. Projecting from behind anterior pillar on right side, and lying across the upper surface of the tonsil, was a smooth white polypoid growth attached to a stalk running behind tonsil. After removal of growth the abnormal sensations and discomfort referred to the fauces disappeared.

Mr. MACLEOD YEARSLEY said that in 1894 he saw a patient, aged forty-five, who presented a small polypoid growth about the size of a grape-stone at the upper part of the left tonsil, which was itself enlarged. It had only been noticed by her for about four weeks, and caused no symptom beyond a frequent desire to swallow. It was removed under cocaine, and did not recur. On section it was found to consist of adenoid tissue, with a covering of stratified epithelium. At one spot in the growth was a small hæmorrhage.

Dr. WILLIAM HILL. *Lupus of the Larynx.*

A young girl, aged thirteen, who had been brought before the Society last winter, when she had lupus of the tip of the nose and palate. By persistent scraping and cauterization (she had been under an anæsthetic nearly twenty times) the nose and palate had healed by August last, and the epiglottis showed no infiltration at that period, when she was sent to a convalescent home. Six weeks ago the patient presented herself again, complaining of cough; on examination the epiglottis was seen to be thickened and infiltrated, and rather pale—in fact, very suggestive of the ordinary form of tuberculosis; now, however, it was red, irregular,

and granular on the surface, and conforming with the appearances of chronic tubercular lupus. The patient also had a patch of lupus on the face and on the left foot.

Dr. DUNDAS GRANT thought it a case of lupus of the larynx.

Dr. BEALE had seen many such cases, and found the surface of the epiglottis remained free from ulceration, and, therefore, he advised leaving the local condition alone.

Dr. HILL, in reply, said he purposed trying a new form of tuberculin.

Dr. JOBSON HORNE. *Cyst of Epiglottis.*

The patient, a man, aged thirty-six, complained of cough and wasting. Pulmonary tuberculosis was diagnosed, and it was whilst looking for evidence of tubercle in the larynx that he met with this cyst on the epiglottis.

The cyst had the appearance of a small grape; it was tense, slightly translucent, and coursed by vessels. It was situated on the lingual surface of the epiglottis, occupying the left half, and was attached by a broad base close to the free edge.

The man had been suffering from dysphagia for six months; for some time he had been taking only food fairly chopped, but latterly had had to reject even fluid food. The dysphagia had been so gradual in developing that he regarded it as occasioned by his general ill-health.

The cyst was removed with a hot snare, a faint linear scar indicating its situation. It contained a watery, thin fluid. Since the removal of the cyst, dysphagia had completely disappeared, the cough had been less, and the man's health had considerably improved.

Dr. HORNE considered that in the interarytenoid folds there was evidence of a deposition of tubercle.

In both nostrils the mucous membrane of the turbinal borders was in a condition of true hypertrophy, and was causing partial obstruction.

Mr. CRESSWELL BABER instanced a case of a child, aged five months, in whom there was a cyst, about the size of a marble (apparently congenital), to the right side of the epiglottis. It produced noisy respiration and occasional dyspnoea. The cyst was ruptured by means of forceps, and collapsed completely. The breathing was relieved.

Dr. BRONNER, Sir FELIX SEMON, and Dr. DUNDAS GRANT reported similar cases in which large cysts had been present and given rise to well-marked symptoms.

Dr. SCANES SPICER. *Case of Paralysis of Right Vocal Cord, Right Side of Soft Palate, and Right Side of Pharynx, probably due to Nerve Lesion high up in the Neck.*

J. W., aged seventy-two. Has been a smith. In good health until Christmas, 1896, when after a cold he became hoarse and had difficulty of swallowing; no difficulty of breathing even on exertion, though occasionally his breathing is noisy; when first ill could not lie on his left side. On examination the right vocal cord is seen to be immobile, and in the middle line; the right arytenoid cartilage jerks a little on commencing phonation; there is no marked alteration in contour of the right

crico-arytenoid joint, and the left side of the larynx is normal. The right side of soft palate is paretic, the faucial arch being lower than the other, and flatter, and the patient states he does not feel as well on right side of pharynx as on left when probed. The tongue, sterno-mastoid, and trapezius are not paretic or wasted. These points were confirmed by Dr. Wilfrid Harris, who also examined the chest with a negative result. No evidence of pressure in the neck. By process of exclusion it appears probable that some lesion has involved some of the roots of the spinal accessory and vagus, perhaps a peribulbar pachymeningitis, or possibly focal degeneration of bulbar or spinal nerve cells.

The patient denies specific history, and there are no evidences of it. He has, however, been taking iodide of potassium, ten-grain doses thrice daily, for three months, without any marked change in condition three weeks ago.

Dr. HALL was inclined to view the local appearances as due to inflammatory mischief.

Sir FELIX SEMON thought the appearances were almost within physiological limits, in which Mr. BUTLIN agreed; but Dr. GRANT thought the palate paralysis was quite marked.

Dr. STCLAIR THOMSON also confirmed Dr. Grant's opinion, and observed that Dr. Hughlings Jackson laid stress on observing the soft palate in all cases of motor impairment, and to accept as distinctly typical of hemiparesis that condition in which on phonation one side of the palate remained lax, while the opposite showed a contraction dimple, and the median raphe was drawn towards the unaffected side.

In reply, Dr. SCANES SPICER thought that the palate condition had altered since his last examination, and the faucial arches were now of equal height.

Dr. HERBERT TILLEY. *Case of Chronic Lateral Hypertrophic Laryngitis simulating Malignant Disease.*

Patient is a male, aged thirty-eight. He had suffered from hoarseness for six months, but no pain or difficulty of swallowing, and has not lost weight to any appreciable degree.

He is a confirmed asthmatic, and has to rise every night to smoke his "powder."

On examination the right vocal cord is seen to be quite immobile on phonation. It is in parts of a pale milky colour. The thickening extends nearly the whole length of the cord, and some is seen in the anterior commissure.

There is an enlarged gland in the right submaxillary triangle.

Sir FELIX SEMON said that it was only fair to say that the title of the case was really due to his suggestion, made some week or two ago, when he saw the case in consultation with Dr. Herbert Tilley, who had brought the patient to him for confirmation as a case of malignant disease and to discuss the advisability of operating. Appearances in the patient's larynx had since altered, and now he felt inclined also to look upon it as malignant, but would not like to be positive in the matter.

Dr. BRONNER suggested removing a piece for microscopic examina-

tion, and Dr. DUNDAS GRANT asked that the sputa might be examined for tubercle bacilli.

Dr. HERBERT TILLEY, in reply, stated that he thought there was no suggestion of tubercle in the case ; the patient was a great sufferer from asthma, and asthma and phthisis were rarely found together. It would be difficult to examine his sputum, as it was impossible to obtain anything except small pellets of clear mucus, which he expectorated after burning his "asthma powder." He thought the case would turn out to be malignant.

Mr. WYATT WINGRAVE. *Thyro-Hyoid Cyst.*

A little girl, aged five, when first seen complained of a "running sore" in her neck. Her history was that ever since a few months old a swelling had existed below her chin, which gradually grew to the size of a cob-nut. Twelve months ago, becoming red and tender, it was "cut" by her doctor, and had discharged ever since.

On examination the aperture of a fistula was seen in the middle line of the neck, superficial and apparently attached to the isthmus of the thyroid body, moving with deglutition and discharging pus-like matter, which was found to consist of epithelial cells undergoing fatty degeneration, suggestive of colostrum corpuscles.

From its situation, anatomical relations, and history it was diagnosed as the vestige of a cystic thyro-hyoid duct.

It was dissected out, and on microscopical examination presented an irregularly corrugated canal with diverticula, lined by spheroidal and ciliated "palisade" epithelium, resting on an ill-defined hyaline basement membrane, outside which were occasional clusters of small-cell tissue. The wall or capsules was composed of densely packed bundles of white fibrous tissue.

These histological details exactly correspond with those occurring in a perforation made two years ago from a case under the care of Dr. Dundas Grant ; and, although such examples may not be of unfrequent occurrence clinically, in the absence of other microscopic records relating to this particular portion of the thyro-glossal duct they may be of interest to the Society.

Mr. BUTLIN had removed two or three of such cysts with their ducts, and had been obliged to follow the latter up to the base of the tongue by going in front of the hyoid bone.

Mr. WALSHAM and Mr. STEWART reported similar cases.

Dr. PEGLER. *Case of Necrosis of the Left Inferior Turbinal with a History of Traumatism.*

Mrs. A., seen July, 1897, complained of discharge from and obstruction in the left nostril. When a young woman she had struck her nose violently against a post. The organ was said to have been broken, and there was much epistaxis at the time. Since that time there had been some trouble connected with it, *i.e.*, obstruction, offensive discharge, and more recently bleeding. Two pieces of dead bone are said to have been taken away some time ago.

Externally there is now some deflection of nose to the right. There

is a mucocele in the inner canthus of the left eye. A mass of granulation tissue blocks up the left meatus and is bathed in pus. With the probe a rough grating may be felt beneath the granulations like that of dead bone. Little has been done in treatment, owing to patient's objection to an anæsthetic.

Such cases are probably not rare, but have not received the attention they deserve, and the exhibitor would like the opinions and experiences of members of the Society in similar cases.

Mr. CRESSWELL BABER thought the rough body in the left nasal cavity was either a piece of necrosed bone, a rhinolith, or a foreign body. He advised its removal with forceps after it had been, if necessary, broken up.

Mr. WALSHAM said he thought the mass would easily come away.

Dr. STCLAIR THOMSON thought that the history of injury dated rather far back, but that if trauma was actually the cause it was important to put such a case on record along with Mr. Walsham's, for Tissier said that necrosis of a turbinal was so pathognomonic of syphilis that whenever found it was superfluous to inquire for a specific history.¹

Dr. PEGLER, in reply, stated that he had not regarded the case as syphilitic, because the appearances were entirely different from what he had seen of that disease.

In reply to Dr. StClair Thomson, the history might be rather ancient, but the woman was very intelligent in the matter. There seemed to be a definite continuation of nose trouble, traceable directly back to the date of the accident.

In reply to Dr. William Hill, there was no reason why the case should not be regarded as one of rhinolith with dead turbinate bone for a nucleus.

Dr. PEGLER. *Disease of the Right Vocal Band for Diagnosis.*

E. C., aged fifty-six, complains of loss of voice.

History.—The trouble commenced five or six years ago by a feeling as of always wanting to swallow; this was followed by a bad cough. Her voice gradually left her, and has never returned. The woman has had seven children born alive; the eighth pregnancy terminated in a miscarriage. There is no pain in the throat.

Laryngoscopically the most conspicuous object is a deep red somewhat conical growth occupying the upper surface of the anterior third of the right vocal band. The right vocal cord is entirely concealed, the left is intensely red. The arytenoid cartilages move freely and equally on attempts at phonation, and there was no infiltration of the laryngeal structures.

Mr. BUTLIN thought a piece of growth might be removed, in which Sir FELIX SEMON concurred.

In reply to the President, Dr. PEGLER said he had not been able to decide between malignant disease and syphilis. Dr. Whistler had examined the patient with him, and was inclined to regard it as syphilitic. He should try the effects of an antisyphilitic treatment in the first instance.

¹ "Wiener Klin. Wochenschrift," No. 37, 1897.

Dr. WORTHINGTON. *Prolapse of Ventricle of Morgagni.*

The speaker, who showed the case for Dr. Percy Kidd, said that there was dyspnœa and stridor for three weeks before her admission to hospital, and great dyspnœa on admission; also great œdema of epiglottis, which subsided in a day or two, leaving the small tumour which is now seen.

Dr. STCLAIR THOMSON reminded the Society that Koschier—Stoerk's first assistant—had published a paper founded on the histological examination of nineteen cases, and demonstrating that there was no actual eversion of the sinus in the condition known as "prolapse of the ventricle of Morgagni." Such cases turned out to be solid tumours, cystic or fibromatous, taking their origin from the wall of the sinus; but the actual wall of the sinus remained *in situ*.

Dr. BOND also made remarks on the case.

Dr. LAWRENCE. *Case of Early Tubercular Laryngitis.*

C. N., aged twenty-two, general servant. One sister of nine suffers from "weak chest." Patient lost her voice two years ago, and at that time had atrophic rhinitis, pharyngitis, and laryngitis. She quite recovered from this under appropriate constitutional and local treatment. There is almost complete aphonia now, and pharynx is as before. Vocal cords do not move freely, and there is a small pinkish swelling in the interarytenoid space.

Examination of chest shows a flattening and impairment of the note at right apex, fine crepitations and cogwheel breathing under right clavicle. The exhibitor considered these latter symptoms, with the swelling of the interarytenoid space, indicated early tubercular laryngitis.

Dr. BEALE thought there was no evidence of tubercle, but only chronic laryngitis, which was probably secondary to nasal disease—an opinion in which Mr. DE SANTI agreed.

TWELFTH INTERNATIONAL MEDICAL CONGRESS, MOSCOW.

August, 1897. (Continued from Vol. XII., page 680.)

SECTION OF LARYNGOLOGY AND RHINOLOGY.

DISCUSSION ON SUPPURATIONS OF THE NASAL ACCESSORY SINUSES WITH THE EXCEPTION OF THE MAXILLARY.

By Dr. HAJEK (Vienna).

Etiology.—Influenza, measles, scarlet fever, small-pox, croupous pneumonia, typhoid fever, are often accompanied by inflammatory affections of the accessory sinuses. It has not been determined in what way the infectious diseases mentioned cause inflammation of the accessory sinuses. It is also not certain whether the bacteria found in the secretion represent the primary cause of the disease, or whether they are only to be con-

sidered as secondary conditions. The question has not been decided whether empyema of the accessory cavities occurring in the infectious diseases mentioned are spread from the inflammation of the nasal mucous membrane or represent independent diseases; most authors are of the latter opinion. Yet the extension from the nasal mucous membrane is as good as proved by observations of the onset of chronic empyema. Many catarrhs and empyemas of the accessory cavities heal spontaneously; many do not. The cause of the chronicity of empyema depends on the anatomical conditions and the character of the secretion, which prevent a rapid evacuation of the secretion. The opinions on the antecedent relations between nasal polypi and empyema are not completely settled. It has been proved that empyema is a frequent cause of nasal polypi. Likewise it has been proved that polypi without empyema can occur as a genuine inflammation of the covering of the ethmoid bone. It is questionable whether polypi can be considered as the primary cause of empyema. The observation that cases of suppuration of the ethmoid heal sometimes after removal of polypi and hypertrophies preventing the escape of secretion, without further measures, demonstrates at least that polypi and hypertrophies are conducive to the chronicity of empyema. The views on the etiological connection between empyema and ozæna are more distant. The opinion of the anatomist, that disease of the accessory cavities in ozæna represents only an accidental condition, is against the opinion of many rhinologists who have often found disease of the accessory cavities in ozæna. The question constantly in the foreground of the discussion is, from whence does the secretion in the individual case proceed?

Diagnosis.—In relation to the diagnosis of empyema of the frontal sinuses and ethmoid, the advanced cases with symptoms visible externally—swelling on the inner and upper wall of the orbit, orbital abscess with pressure on the bulb, with or without fistula—are to be differentiated from the so-called latent empyema, where for want of external visible symptoms only rhinological examination is able to give an explanation by means of the probe and cocaine. There is no explicit diagnosis of latent frontal sinus and ethmoidal empyema without examination with a probe. A light blunt probe is perfectly safe in experienced hands. The most important factor in the diagnosis consists in the discovery of a focus of suppuration with the probe; the whole of the patient's subjective symptoms in relation to the diagnosis are of subordinate importance compared with the result of probing. Owing to the difference in the structure of the anterior ethmoidal cells, in disease of the frontal sinus exclusion of disease of the anterior ethmoidal cells is hardly possible. Partial resection of the middle turbinate is often necessary for diagnosis of latent empyema of the frontal sinus or ethmoidal cells. Resection should be done with cutting instruments. Enclosed empyema of the ethmoidal cells can only be disclosed by expansion of the nasal side. The expansion occurs usually as an enlargement of the middle turbinate or as a tumour projecting from part of the middle turbinate into the nasal cavity; seldom is the osseous septum pressed over to the other side. The tumour occurring on part of the middle turbinate can be caused by (1) retention

of pus in a bladder-constructed middle turbinate ; (2) expansion of an ethmoidal cell extending deeply into the middle turbinate ; (3) retention of pus in the bulla ethmoidalis, which then extends as a tumour over the inferior turbinate. In the last case it is only evident after removal of the osseous wall of the bulla that the tumour does not represent the middle turbinate, for the middle turbinate, before pressed upwards, becomes visible. Empyema enclosed in a single ethmoidal cell, when there is no dilatation, are not capable of diagnosis. They will sometimes be discovered after removal of hypertrophies and polypi.

The diagnosis, whether the discharge comes from the anterior or posterior ethmoidal cells, is made in open empyema by the anatomical situation of the exits ; in enclosed empyema an exact differential diagnosis is often impossible. Open empyema of the posterior ethmoidal cells shows the same rhinoscopic appearance as empyema of the sphenoidal sinus. The discharge appears either in the fissure olfactoria or over the middle turbinate on the pharyngeal vault. The diagnosis of empyema of the sphenoidal sinus is easy, if the opening of the cavity is visible and can be probed (seldom) ; but if the middle turbinate lies against the septum, resection of the greater part of the middle turbinate is unavoidable. In conclusion, it is generally to be understood that the condition of the resistance of single parts of the ethmoid obtained by the probe alone, is quite as important for the diagnosis as the place where the patients locate the pain.

Dr. A. J. MOURE followed with an extensive review. He first dealt with the question generally as found in our clinics, then with affections in the ethmoidal sinuses. The latent fungating variety was then considered from the diagnostic point of view as well as treatment. Fistulous openings in the bone were lastly considered. The affections of the frontal sinuses, acute and chronic, were also dealt with in the same fashion ; lastly, the diagnosis and treatment of affections of the sphenoidal sinuses were considered. His paper will be published more fully afterwards in the reports.

WEIL (Vienna). Most empyemas arise by infection from the nose, and will generally heal of themselves. All the treatment required for an acute empyema is to make sure that the secretion is not dammed up, and this can generally be obtained without any surgical interference. At the present time there was far too much surgical interference in the nose. In some cases part of the middle turbinate had to be removed, but this ought to be done by clean cutting, never by scraping. Scraping always produced copious hæmorrhage, which required to be stopped by tampons ; but tampons ought never to be used in a nose in which there was any suppuration, as they were the most certain means of producing meningitis. In combined empyemas the ethmoid cells were always involved—in fact, were the central point in the process, and therefore ought to be first treated. The cells might have to be opened, but this should always be done with extreme care, never by coarse scraping. He had all his nasal probes hollow, so that they could be used for syringing whenever that was necessary. This saves much unnecessary irritation of the nose. He denied that it was necessary to remove the middle turbinal before

probing the sphenoid. There were very few cases in which one could not pass the probe along the middle turbinal and be quite certain of entering the sphenoid sinus.

Dr. WILLIAM HILL (London). I crave the attention of this section for a few moments to advocate the abolition of the drainage tube in all sinus operations and especially in frontal sinusitis. I am convinced from considerable experience in dealing with various cavities (in particular the mastoid antrum and maxillary antrum) that the drainage tube is an unnecessary evil. It acts as a foreign body, promotes exuberant granulation growth, and stimulates the production of pus. Our aim should always be to make a large hole in the neighbourhood of the natural orifice so as to depart from the normal condition of affairs as little as possible.

In the frontal sinus operation it is in my opinion particularly desirable, when the cavity has been opened, that the edges of the frontal wound should be brought together and union by first intention effected, so that scarring may be avoided. In a case which I showed at the Laryngological Society of London, the scar was so slight six months after operation that members were unable without special illumination to determine which side had been operated on. If a drainage tube is left for even a short time some scarring is inevitable, and in protracted cases it is often far from insignificant. For this reason I prefer the horizontal brow incision to the vertical one advocated by Mayo Collier. In order absolutely to avoid scarring a drainage tube at the angle of the orbit must be dispensed with, and, from a limited experience, I believe that this object can be attained if a sufficiently large opening be made into the nose. Luc has with much ability shown that it is advisable to take away a portion of the floor of the frontal sinus, as enlargement of the infundibulum by passage of a bougie or dilating forceps is rarely sufficiently successful to admit of our dispensing with a drainage tube in the brow wound.

I have carried out Luc's operation so as to allow of the passage of the blades of a polypus forceps from the brow wound into the nose; but under these circumstances the drainage has not always been sufficient, the wound having to be subsequently reopened. Our aim should be to perform straight off a radical operation, and this can only be attained by removing the half of the middle turbinal, then chiselling or picking away as much of the floor of the sinus (keeping close to the septum) as will admit of the passage of the little finger from the sinus into the nose, and of a large pair of forceps from the nose into the sinus. Under these circumstances no matter is retained, and, subsequently, treatment, whether by cutting forceps or syringe, can be continued from the nose, both by the physician and by the patient. I feel sure that the method I have advocated will well repay the trouble and skill which the operation requires. Like other people I have had successes as well as failures, and the latter have, I think, always been due to not making a large enough opening into the nose.

JANSEN (Berlin). The situation of pain was not much used as a guide to the seat of suppuration. In one case there was extreme severe pain in the region of the antrum. On examination, nothing could be found

indicating central disease; in fact, nothing abnormal but a large spur. This he removed, but with no result. Thinking that possibly pus might be lodged behind the middle turbinal, he removed it, and several polypi immediately sprang forward into the free space, and on removing these the pain ceased. He did not agree with Hajek that there was much advantage to be gained by exactly diagnosing which of the ethmoid cells was involved in a suppuration, because empyema generally affected several at one time. He thought it was not so easy as Moure has stated to remove all the ethmoid cells. In his opinion it was extremely difficult. He was glad to learn that Moure had adopted his (Jansen's) plan of entering the sphenoid through the frontal sinus in combined empyemas. In dealing with frontal empyema, it was important to distinguish between large and small sinuses. The latter were very easy, but the former extremely difficult to cure. Jansen then took up several points insisted on by Weil, with most of which he disagreed.

HAJEK, replying first of all to Weil, admitted that in some cases where there was a wide free space between mid-turbinal and septum it was possible to make sure of entering the sphenoid by a probe, but these were mostly cases where a probe was badly needed. On the other hand, in cases where probing was required there was generally a very narrow space between septum and turbinal, and he totally denied that it was possible in such cases to know whether your probe had entered the sinus or some pocket formed by growths or adhesions between turbinal and septum. As to treatment, he quite admitted the necessity of first trying conservative methods, but when they failed operation must be resorted to. Further, he wished to know what advantage Dr. Weil expected to gain in a case of empyema with granulation or polypoid tissue by his conservative treatment. With regard to the position of pain as a guide to the seat of an empyema, he absolutely denied its value. It might radiate along any branch of the trigeminus.

MOURE in his reply again insisted on the value, or rather necessity, of operative treatment.

DUTCH LARYNGO-OTOLOGICAL SOCIETY, AMSTERDAM.

Fifth Meeting, 23rd May, 1897.

(Specially reported for the Journal by Prof. GUYE, Amsterdam.)

Dr. BRAEL showed a patient, aged fifty-seven, who came under his treatment in October with *Aphonia*, the result of a cut with a knife, about the middle of the left sterno-cleido mastoid. The wound had healed soon, but complete aphonia followed. It was very remarkable that the right vocal cord was paralyzed, and the left appeared to move normally. It seemed to be a traumatic neurosis, and, although the voice was better now than formerly, the right posticus paralysis still remained, and could not be otherwise accounted for.

Dr. REINTJES showed a patient, aged twenty, with *Subglottic Stenosis*, which had developed during an attack of typhoid fever about six months ago, and which still gave the patient much trouble.

Prof. PEL showed three patients with *Hysterical Aphonia*, complicated with various hysterical stigmata. In one there was a "tic convulsif" in the left side of the face; in the second a hysterical ptosis; and in the third, very intense hysterical photophobia, which prevented the patient from opening her eyes when they were not sheltered by very dark spectacles.

Prof. GUYE showed (1) a patient with a *Mastoid Affection*, which had been cured seven years ago with two permanent openings, one in the external auditory canal and one in the surface of the mastoid. Both were quite coated with epidermis, and the antrum remained for the last seven years in a perfectly dry state without causing the patient any trouble. This final state after mastoid operations seems to be very satisfactory, and is a parallel of some cases of spontaneous cure, of which a case was described by Redmer.¹

Prof. Guye showed (2) a patient on whom, about three weeks ago, an *Empyema of the Ethmoid* was operated according to the method of Grünwald. The patient had a fistula in the inner angle of the right eye for six months. It was opened, and part of the ethmoid bone removed with a sharp spoon. A piece of iodoform gauze was passed through the opening into the nose and came out by the nostril. Every day a fresh piece of gauze was fastened to the old one and passed through the nose. After ten days the gauze was left out, and now a little iodoform glycerine was syringed daily through the opening, which will now be left to heal, probably in a few days.

Prof. Guye also showed (3) a large *Bulla Ethmoidalis*, which he removed two years ago from a clergyman. The bulla, by pressing against the septum, gave rise to vasomotor reflex, to congestion, and aprosexia. Since the bulla was removed the patient very soon was able again to do his work, and is quite well now.

Dr. COHEN TERVAERT. *A Patient with an Intralaryngeal Cyst containing Air.*

The patient, sixty-two years of age, has had hoarseness for seventeen years, and now and then shortness of breath, especially after movements. The patient had had paralysis of the left vocal cord, and it seems that there had developed a hernia sinus Morgagni, by the air being drawn into a fissure in the mucous membrane.

MUSEHOLD showed a case analogous to this in the Berliner Laryngologische Gesellschaft, on December 7th, 1894.

Dr. H. BURGER showed (1) *A Case of Cured Ozæna.*

It had been a very chronic case, and treatment by massage with menthol oil, syringing and insufflation of boric acid, had effected a complete cure, lasting already eleven months.

¹ "Zeitschr. für Ohrenheilkunde," 1896, p. 265.

(2) *A Case of Healed Tuberculosis of the Larynx.*

Removal of part of the tuberculous growths by means of a cutting forceps and painting with lactic acid had been the treatment. The patient had now been well for fifteen months.

Dr. MICHELSEN. *On a Case of Enuresis Nocturna.*

A boy of seven years had a nasal catarrh, which, when it had lasted about a month, he became restless in his sleep, snoring, and enuresis nocturna. The patient was only seen once, and the case was mentioned as one in which the nasal origin of the enuresis was apparent, which some rhinologists consider as doubtful, because often the treatment is not efficacious.

In the discussion, Dr. POSTHUMUS MEYJES remarked that he had seen patients with moderate nasal stenosis, suffering from enuresis, cured by cauterization. These are patients who go to sleep with their mouths shut. He thinks that carbonic acid intoxication produces paralysis of the sphincter vesicle. Patients who go to sleep with the mouth open rarely develop enuresis.

GUYE stated that he had in many cases seen enuresis disappear after nasal treatment, and especially after removing adenoids. He considered enuresis a result of aproxia nocturna.

Dr. VAN DER HEDDE had often operated on adenoids on account of enuresis with a very good local result, but without any influence on the enuresis.

Prof. PEL. Enuresis may have various causes—sometimes nasal disturbances. He cannot agree with Dr. Posthumus Meyjes with regard to the carbonic acid intoxication. Carbonic acid in small doses is an excitant, afterwards comes the paralysis. But why should the carbonic acid only paralyze the sphincter?

Dr. BRONGEEST. Enuresis develops very often without any nasal disease. He has for years had to examine children before admittance to a large institution in Utrecht, and has ascertained that in the large majority of cases of enuresis there is no nasal disease.

Dr. ZWAARDEMAKER showed a *New Model of Olfactometer*. Also objects made for measuring the gustatory sense. They are made of elderpith impregnated with solutions of salt, tartaric acid, saccharine, and sulphate of quinine.

Dr. W. SCHUTTER mentioned a *Case of Empyema of the Frontal Sinus* which he had operated on after the method of Kühnt.

Prof. PEL showed a patient with an *Aortic Aneurysm* to show the symptom of Oliver. You take the trachea between finger and thumb, just under the cricoid cartilage, and draw the trachea slightly upwards. You then feel that with each systole the trachea and larynx are drawn downwards.

Dr. A. C. H. MOLL. *On Nasal Reflexes.*

Moll related two cases of a peculiar reflex, consisting in a considerable difficulty in swallowing. The first case was a man of sixty, who had

not been able to swallow anything but fluids for more than a year. He at first made the impression of suffering from cancer of the œsophagus. There was nothing abnormal to be found in the pharynx, larynx, or lungs. The œsophageal probe went through easily. Only in the right nostril he found a large spina septi, which was nearly embedded in the inferior turbinated. After cocainization the swallowing was much easier. Then the spur was removed by means of an electric saw, and the next day, when the tampon was removed, the swallowing was easier still, and very soon without any trouble. Another similar case was that of a woman of fifty-three, who had the same difficulty in swallowing, which again was greatly relieved by removing a large septal spur.

Dr. COHEN TERVAERT showed specimens of an *Angio-Sarcomatous Tumour* removed by him from the auditory canal in a lady of about sixty. Four years ago he removed a tumour in the same place with curette and cauterization, but as it had returned he now operated more radically.

Tervaert showed a fragment of a palatal setting for artificial teeth which a lady had bitten off in a swooning fit, and which was not found afterwards. The only trouble occasioned by the foreign body was a continuous short cough. With the laryngoscope it was found riding on the bifurcation of the trachea, and removed by tracheotomy by Prof. van Iterson.

In connection with this case Dr. VAN ANROOY showed a child's flute, 0·8 centimètre thick and 3 centimètres long, which was not found by tracheotomy nor by laryngoscopic examination, and which was removed five years later by coughing.

Prof. PEL mentioned the case of a child of ten, lying now in his ward. It had drawn one of its teeth and kept it in the mouth. In the night the breathing became difficult, and when it was brought to the hospital there was a stenosis of the left bronchus and a pneumonia on the same side. Later on a large pneumonic abscess developed itself, and was opened in the back, without the tooth being found.

Dr. BRAEL mentioned a case of a woman of fifty-one, who was sent to him on account of *Otalgia and Ringing in the Left Ear*, which had lasted about five weeks. He found the hearing normal, and no objective anomaly in the ear. The second upper molar was carious, and very sensitive on percussion. He advised her to have it drawn. This was done five weeks later, and the same day there developed a complete facial paralysis on that side, followed the next day by a paralysis of the taste on the left side, paralysis of the left vocal cord and mastoid process rather painful, paralysis of the cucullaris, and paresis of the sterno-cleido mastoid. Under rest and iodide of potassium (1·50 gram. *d. die*), after a few weeks the paralysis of the facialis, recurrens and glosso-pharyngeus, also of the accessories, began to improve, and after two months they had passed away. The hearing only did not improve. Brael considers the case as an extravasation near the basis cerebri, somewhere between the porus acusticus internus and the foramen jugulare, which was made probable by the existing arterio-sclerosis, and was probably determined by the shock and emotion caused by the abstraction of the tooth.

Dr. BURGER related a case of a young man of eighteen, whose *Sclerotic Deafness* was very much improved by the intratympanic injection of parafinum liquidum.

Dr. VAN LEYDEN mentioned a case of *Sarcoma of the Naso-Pharynx* in a gentleman of seventy. The trouble in respiration and hearing had lasted for ten months. The surface of the tumour was bluish red. Having regard to the age of the patient, the tumour was removed partially with a slightly modified conchotome, and the rest was treated by electrolysis. In the same time the patient took liquor Fowleri—three times a day, three to eight drops. After a treatment of two months the patient could be considered as cured, and he now has nothing to complain of.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY.

Third Annual Meeting, held at Washington, D.C., May 1st, 2nd, and 3rd, 1897.

(Specially reported for this Journal by ROBERT C. MYLES, M.D., New York.)

(Continued from page 691.)

The President, FRANK HYATT, M.D. (Washington), in the Chair.

Chronic Non-suppurative Otitis Media. Dr. S. MACCUEEN SMITH.

The author said that for clinical purposes it was sufficient to regard the several varieties as different stages of one disorder, beginning with a simple catarrh and ending with advanced trophic changes involving the internal ear, and attended by deafness, vertigo, and tinnitus. The true underlying condition was a naso-pharyngeal catarrh. Free nasal respiration should be established. The treatment should consist of a free incision into the membrana tympani along the entire length of the handle of the malleus. Through this a small knife should be introduced and adhesions divided or broken up. Sterilized albolene should be introduced into the tympanic cavity, and the meatus lightly plugged with iodoform gauze. Massage of the ossicles at intervals of a few days should be practised, as also ten to twenty hypodermic injections of pilocarpin. Phosphorus and strychnine should be given internally. His conclusions were (1) that the best results were obtained from the treatment above outlined; (2) that this operative treatment was without risk, and hence, should be adopted before a more formidable one; (3) the majority of cases could be relieved of tinnitus and vertigo if there was no labyrinthine disease; (4) that chronic cases with internal ear involvement did not offer hope of improvement in hearing, but might frequently be relieved of tinnitus and vertigo; and (5) that excision of any part of the conducting apparatus was only justifiable for the relief of tinnitus and vertigo when other measures had failed.

Dr. SARGENT F. SNOW (Syracuse) said that the long-standing cases

of ear trouble, with a history of catarrhal deafness for ten or fifteen years, were usually looked upon as unfavourable. He had done this himself up to the last three years. The prospect of relief depended not to much on the amount of deafness as upon the amount of retraction of the drum and dislocation of the ossicles. The all-important point was to thoroughly remove from the nasal passages all growths causing obstruction or pressure. In the very chronic cases good results might not come if such operative treatment were speedily followed by measures to relieve the deafness; but if the latter were deferred until nature had had time to restore the natural condition of the mucous membrane, the outlook would be far better. This restoration might occur in some cases within two months, in others it might be two years. In his opinion the best treatment, when not necessary to work on the ossicles as described so thoroughly in the paper, consisted in repeated and thorough stimulation of the parts. He used camphor and iodine vapour, introduced through the Eustachian catheter under a good air pressure. This application seemed to tone up the relaxed mucous membrane of the middle ear, and relieve the catarrhal condition of the tube. A case was cited of a man who had come under his care in 1894. This man could not hear with the left ear the loud whispered voice, but could hear in the right ear at a distance of five inches. The nasal passages were cleared out, and since last October he had been treated with camphor and iodine vapour twice a week. In the left ear he could now hear at a distance of forty-eight inches, and in the other at a distance of eight feet. The speaker said that the great improvement observed in this case had been duplicated several times in his experience. He believed many practitioners failed to introduce the vapour fairly into the middle-ear cavity. It could not be done in every instance by a light air pressure, and hence he carefully used air from the reservoir—sometimes under a pressure of eighteen to twenty pounds—to open up the tube, in those instances where it did not seem necessary to use the bougie.

Dr. FRANK B. SPRAGUE (Providence) said that he had long made it a rule not to give a bad prognosis in those cases until after he had given the recognized methods of treatment a fair trial. As a result, he succeeded in securing satisfactory improvement in cases which certainly had appeared almost hopeless at the beginning. The importance of securing a clear passage through the nose and Eustachian tube to the tympanic cavity, and as far as possible a healthy condition of the parts, could hardly be over estimated.

Among the various means of direct treatment to the middle ear, he had employed with very favourable results a method of massage used for a long time by Dr. Blake, of Boston, known as Homa's massage, consisting of a series of movements of the tragus, sufficient to close the meatus tightly, made by pressure with the tip of the finger. This is followed by the use of the Politzer "plug" (consisting of paraffin, simple cerate, and cotton) with a thread attached. By the insertion of this plug the canal is converted into a hermetically sealed cavity, from which, after a sufficient time has elapsed, the air is absorbed by the normal absorption

process of the skin, and a vacuum is produced, which tends to withdraw the retracted drumhead, and with it the depressed ossicles from their abnormal position.

A certain amount of hyperæmia is necessarily produced in the tissues of the tympanic cavity. This has its beneficial effect in the way of a counter-irritant. The plug should only be used in one ear at a time, and should only be left in over night, it having been inserted on retiring.

The objection to the pneumatic massage, either with Siegel's speculum or other forms of massage instruments, is the danger of stretching the tympanic membrane. Another consisted in using injections through a Eustachian catheter, bringing the fluids in contact with the mucous membrane of the tympanic cavity. For this purpose he has used benzoinol or albolene, either plain or containing menthol and camphor, and also solutions of carbolic acid and iodine in benzoinol. He preferred to use the fluid rather freely, and with sufficient pressure to carry the fluid into the tympanum. The results had been very good.

A method pursued in Politzer's clinic consisted in the injection of sterilized oil through the catheter, using as much as the tympanic cavity would hold. This caused violent irritation for a time, and even pain, but he had never seen untoward results. One of Prof. Schwartze's methods was to use massage with the elastic sound, and it gave admirable results. Pressure was made on the short process of the malleus.

Dr. WILLIAM H. DALY (Pittsburg) asked the strength of the mixture injected into the tympanic cavity; also whether Dr. Sprague had practised the method extensively, and whether fainting or nausea had been observed in connection with this treatment.

Dr. SPRAGUE replied that he had never seen fainting or unpleasant consequences. He had used it constantly for a year in both private and hospital practice. He used a solution of twenty grains each of camphor and menthol in one ounce of benzoinol. Half an ounce of this was usually mixed with half an ounce of Schiefflin's iodine and carbolic acid mixture in benzoinol. With an ordinary eye-dropper fifteen or twenty drops were instilled into the Eustachian catheter, and then, with the air-bag, forced into the tympanic cavity.

Dr. SCHEPPEGRELL is strongly opposed to the use of compressed air apparatus, as suggested by Dr. Snow. He recalls a case in the practice of an experienced aurist in which the tympanic membrane had been perforated by means of the Politzer bag; and, if this is possible with this instrument, how much greater danger would there be with the compressed air apparatus, which formerly was much used, but is now, fortunately, little practised.

As regards the pneumatic speculum, in these cases the difficulty is that where there are adhesions and anchyloses the influence of rarefaction and condensation is expended on the more flaccid parts of the drum which yield more readily, and but little influence is exerted on the points which form the real object of the manipulation. As regards the use of a plug to keep up the vacuum, this is difficult to accomplish. If successful the decrease of atmospheric pressure would cause a congestion of

the drum and of the surrounding parts, which would ultimately prove injurious to the patient. This could easily be observed by producing a rarefaction by means of a Siegel's speculum.

Dr. E. E. HOLT (Portland, Me.) said that in the early days of his practice it was the custom to make an opening in the membrana tympani, and some operators introduced the stilette. The practice of cutting the tensor tympani muscle was also employed. These operations were seldom practised now. Each case of aural disease should be treated individually. The history of a large number of cases would necessarily cause one to give an unfavourable prognosis. He had used the plugs, and thought he had derived some benefit from them, but had now discontinued their use. The naso-pharynx should receive careful attention in every case. In all of these cases, whatever the treatment made, it was very important to keep the patient busy.

Dr. EWING W. DAY (Pittsburg) said that there was a certain class of cases in which no improvement followed a careful treatment of the nose and throat, and even division of the adhesions in the ear. At one time the writer of this paper had been enthusiastic over the more radical measures—removal of the ossicles, for example—and he would like to know whether he still advocated such procedures. Personally, he felt that such treatment would give remarkably good results if the cases were carefully selected. He cited a case of extreme deafness in which he had removed the ossicles entirely. As a result the patient was able to hear ordinary conversation at a distance of three feet. He had probably operated upon a dozen cases in this way during the past year, and fully eight had been decidedly improved, while the remaining four were neither better nor worse. The vertigo following the operation was sometimes very distressing, persisting in these cases for a week or more.

Dr. R. C. MYLES asked how many of these cases had been operated upon over a year, and if Dr. Day had succeeded in finding the footplate of the stapes.

Dr. DAY replied that the last case had been operated upon in January, 1897. He had a collection of the ossicles, including the footplate. The improvement would be greater at first than afterward, but it had remained fairly constant after the third week. Some of the cases had been under observation for about two years.

Dr. HOLBROOK CURTIS spoke of the use of the olivary bougie, with a mild galvanic current passed through the Eustachian tube by means of an insulated catheter. He said that a practitioner had told him a year ago that he had had excellent results from this treatment in the Eustachian tube, dilating strictures by electrolysis, and curing tinnitus and chronic otitis.

Dr. M. R. WARD (Pittsburg) said that where the adhesions in the middle ear were extensive and firm, the Politzer bag would do but little good. It was a very simple procedure, however, to make an incision into the drum, and by gentle traction break up the adhesions. He had done this operation several times, and in some instances with very good results. In adults it was not usually necessary to give a general anæsthetic; a mild solution of cocaine could be injected with a hypodermic syringe.

After the operation massage should be given. The operation is simple, and in properly selected cases productive of much benefit.

Dr. J. E. NICHOLS said that in cases in which the tube was at all closed up the Valsalva method of insufflation was injurious, because the mucous membrane, in a state of turgidity, was pressed up against the Eustachian orifices, and thus prevented the proper entrance of the air. It was also injurious because, if the difficulty were unilateral, the normal ear would be deleteriously affected by the hypertension. In cases of sclerosis of the membrane the pneumatic speculum could be used, but it was injurious in cases of atrophy. The pressure applied from the outside causes an extra yielding of the already thin surface, and no effect on the anchylosed ossicles. Moreover, the tinnitus was increased.

Dr. SPRAGUE said that he had been with Dr. Jack in his first stapes operations, and he had certainly got many excellent results. Some of these stapes operations had been followed by no result whatever; but in other cases—not Dr. Jack's, but in the hands of other operators—there had been an infinite amount of harm done. He had known persons to be afflicted with vertigo and other distressing symptoms for many months after the removal of the stapes.

Dr. SCHEPPEGRELL gives little credence to the statement made to Dr. Curtis in regard to cures of chronic middle-ear disease by galvanism. He desired to know how the method had been accomplished: where the dispersing electrode had been placed, and which pole had been applied. In most of the cases which he had seen reported, the details were so vague and contradictory that he did not consider them reliable. This method may be productive of much injury. When a current of from one to five milliamperes is applied to the Eustachian orifice by means of a metallic sound, there is an intense concentration of electric energy, which is not only painful, but which will produce an ulcer resulting in cicatricial contraction of this opening.

In his own experience, two milliamperes for a few seconds were sufficient to produce intense vertigo. The only occasion in which he uses electricity at this point is in stenosis of the Eustachian orifice, when the electrolytic method is sometimes useful.

Dr. W. H. DALY (Pittsburg) thought it was much better for the practitioner to test the strength of the current upon his own tongue than to trust to any milliamperemeter.

Dr. PHILLIPS said that anyone proposing to use galvanism for these diseases should first make a careful study of the source of the electric current—as to its pressure rather than its quantity. Fine gradations of voltage were necessary, in order to avoid pain and shock. Most controllers and batteries, on this account, were crude and almost useless for use in highly sensitive areas. Milliamperemeters were untrustworthy, but it was possible to secure a reliable meter.

Dr. SMITH, in closing, said that, of course the operative measures should not be undertaken until other measures had failed. The object of massage was to produce exhaustion and compression, and the exhaustion should occur before the compression, for if this order were reversed vertigo would result. He had performed upwards of 300 operations for

the removal of the ossicles, almost entirely confining the operation to the malleus and incus. One case had had persistent vertigo for nearly a month. He had never purposely removed the stapes on this account. The hearing had improved very markedly in the majority of cases, but very few of them had retained the amount of improvement that had been observed shortly after the operation. His experience had been that cases that did not improve without bougies did not improve with them. The catheter should be used chiefly in cases in which there was obstruction due to mucus or some secretion from the middle ear. He had not advocated massage in the atrophic cases.

Dr. J. C. KERR reported a case of *Laryngectomy for Laryngeal Disease*. Tracheotomy had been performed one month before the laryngectomy had become necessary.

The points in favour of operation were (1) the strong probability of the growth being malignant; (2) the growth being unilateral; (3) no lymphatic involvement, and no infiltration of external tissues.

The patient was a female aged fifty-four, in poor health, and with inactive kidneys. The patient died a week after the operation had taken place.

DISCUSSION ON KERR'S REPORT.

Dr. PHILLIPS said that he had studied these cases carefully for several years past, considering especially the results of the various operative procedures. He had come to believe that in the majority of cases a growth once benign was always benign, and once malignant was always malignant. In a case of his own, recently reported,¹ almost every symptom and condition pointed to a benign growth—a papilloma—yet microscopical examination showed it to be undoubtedly an epithelioma. One half of the larynx was removed by operation, and at this time there was no evidence whatever of involvement of surrounding tissues, and he had advised operation only on account of its being in a very early stage. The operation was done last November, and up to the present time there had been no evidence of recurrence.

The history of operative interference in these cases was extremely discouraging. A very large percentage died during the first few days after the operation, and even when they lived through it, in the majority of cases it was but to die from a recurrence. He did not believe that on an average life was prolonged by such operations, and he would advise operative interference only during early stages. Some observers advised early tracheotomy in these cases, and it would be noted that the symptoms of the disease would suddenly abate after a preliminary tracheotomy. If any operative procedure were to be undertaken it should be the radical one, for partial removals seemed only to hasten the progress of the disease. For this reason he believed that intralaryngeal partial removal was to be condemned in every instance.

Dr. MYLES said that about one year ago a patient had come under his observation with a malignant growth. Two specimens had been examined microscopically, but with no very definite result. He then

¹ "The Laryngoscope," June, 1897.

made a deep section with the Heryng double excisor curette, and obtained a specimen for examination, at the same time insisting that the patient should be operated upon at once after such interference if the growth proved to be malignant. The microscopist reported that the growth was undoubtedly malignant.

Looking over the literature of the subject, he had found that it was a most dangerous operation, the patient dying frequently either from septic pneumonia or from a peculiar condition of asthenia. The patient, who was very anxious to have his larynx removed, submitted to an operation by Cohen's method, which was performed by Dr. J. A. Bodine, of New York. The larynx was completely removed, and all connection with the rhino-pharynx cut off. The healing process was kindly, but there was much trouble from drying of the mucus in the trachea. It was now about a year since the operation; the man had gained twenty pounds or more in weight, and his voice was fairly distinct. This was a good result, but, in his opinion, it was an exceedingly exceptional one. There was at the present time considerable mystery connected with the deaths of some of these patients, who apparently do well for about a week, and then suddenly die.

Dr. JOHN A. THOMPSON said that at one time the same argument could have been made against ovariectomy as had just been offered against laryngectomy, but fortunately the general surgeons had not acted upon this rather illusive mode of reasoning. He believed that laryngectomy was now passing through the same period that ovariectomy had passed through in the early days. We should consider the technique of the operation, and the methods to be pursued to avoid these sudden deaths after operation. In a paper read by Dr. Crile it was shown that by hypodermic injection of atropin heart failure was avoided, and by a spray of cocaine in the larynx and trachea before the insertion of the tube the danger of respiratory failure could be avoided. In the first paper read to-day it had been stated that the patient became cyanotic after coming out of the chloroform anæsthesia, and this, he believed, was due to the packing in the trachea. The same result followed sometimes in cases of diphtheria in which a rather large intubation tube was inserted. Too much reliance should not be placed upon the microscopical diagnosis. In one case to which he referred the operation had been postponed one month because the microscopist insisted that the growth was syphilitic. In operating for carcinoma he believed it was a mistake to do a preliminary tracheotomy. It was better to anæsthetize the patient through the natural channels until all the preliminary dissection had been done. In this way there was absolutely no danger of blood or septic matter getting into the lung. If the operation was done sufficiently early to have a fair prospect of success, it was not necessary to remove the cricoid cartilage. Malignant growths usually started in the upper part of the larynx. If the cricoid was left alone it would greatly aid the patient afterwards in swallowing. There was no necessity for stitching the trachea to the external wound, as there was no tendency to recession. If the cricoid cartilage was left, the superior constrictor of the pharynx would be spared. In his case of sarcoma of the larynx the temperature

never went above one hundred Fahrenheit after the operation. The patient resumed his work, but died five months after operation from sarcoma in the lung.

Dr. W. H. DALY (Pittsburg) said that for some years past he had believed that the clinical history of the individual case would help us more than the microscopical examination. For the last few years he had allowed these cases to go about with no other operation than the preliminary tracheotomy, believing that they should be allowed to die peacefully without subjecting them to this disgusting and revolting operation, which had as yet not proven itself worthy of being advocated, excepting as a show surgical procedure—and viewed in the latter light its recurrence was still questionable.

Dr. ARTHUR G. ROOT (Albany) referred to the case of a man who recovered sufficiently after operation to resume work. His voice was fairly good, but he only lived a comparatively short time. He agreed with Dr. Phillips that it was doubtful whether these radical operations were merciful or served to prolong life. However, a preliminary tracheotomy was useful, as it put the larynx at rest. He was firmly convinced that a larynx the seat of a malignant growth should be left alone. Regarding the statement about intratracheal pressure bringing on syncope, he said that this did not tally with his own experience with intubation. Where he had seen syncope follow intubation it had not seemed to him to result from the pressure of the tube, but rather from the pushing down of membrane before the tube, or from the fact that the tube was so small that sufficient air was not admitted. Quite recently he had made a diagnosis of epithelioma of the larynx in a case based upon the clinical history, and he had refused to remove any portion of the larynx by operation.

Dr. JAMES E. LOGAN (Kansas City) said that he heartily agreed with the statements just made regarding the inadvisability of resorting to these operations. In his opinion, a preliminary tracheotomy was practically all that should be done in these cases, except the use of such means as would alleviate the suffering. He also placed much reliance on the clinical history, and had suffered from the mistakes of microscopical diagnosis in a case of supposed epithelioma, in which he had removed the growth. About a year later the patient had returned with another growth, but in a different part of the larynx, and much more extensive. The second growth was evidently a carcinoma. This patient lived for about eight months after the preliminary tracheotomy.

Dr. WARD said he did not consider it in the province of the laryngologist to do a laryngectomy. This operation more properly belonged to the general surgeon, and in the hands of a skilful operator it was shorn largely of its difficulties and dangers.

Dr. PHILLIPS said that a large proportion of experienced operators agreed as to the advisability of the preliminary tracheotomy. Chloroform was the anæsthetic which should be chosen, on account of the diminished danger of irritating the lungs. Much depended in these operative cases upon the after-treatment.

Dr. W. SCOTT RENNER (Buffalo) reported a case in which Dr. Herman Mynter and he had done laryngectomy, and exhibited the specimen.

Dr. SCHEPPEGRELL, in view of the unfavourable results obtained by surgical methods in the treatment of malignant tumours, called attention to the treatment of such cases by the electric method. Dr. Massey has reported a case of carcinoma of the tonsil which was cured by zinc amalgam cataphoresis, a recurrence not having taken place eight months after the operation. Dr. Scheppegrell reported a case in his own practice in which there existed epithelioma of the larynx and of the base of the tongue, and in which there was extreme pain on deglutition from the latter growth. He applied zinc electrolysis, with the result that in three weeks the growth on the tongue had almost entirely disappeared. On account of the irritability of the throat of the patient and the disturbance which the attempts caused, he was not able to apply the same treatment to the larynx. He was much impressed, however, by the result which he had obtained in the tumour of the tongue. Where a simple application of this kind gives fairly good results it should be given the preference over more radical methods, which almost invariably prove fatal.

Dr. DAY said that in Dr. Ward's case the gross appearance of the growth at first was that of a typical papilloma, but as a matter of routine he had had it examined microscopically, and this examination had confirmed the diagnosis of papilloma.

Dr. T. H. HALSTED (Syracuse). (1) *Sarcoma of the Larynx.* (2) *Sarcoma of Naso-Pharynx in an Infant.*

He said that the disease was now a rare one, yet he felt sure that, owing to the fact that unsuccessful cases were not often reported, the condition was not as rare as statistics would seem to indicate.

Case I. J. H., a man fifty-seven years of age, came to him on June 11th, 1896. There was difficulty experienced in swallowing just as the food reached a point opposite the larynx. A constant ropy secretion was expelled by coughing, and there was an excessive secretion of saliva. The laryngoscope showed a rounded, greyish, non-ulcerated tumour, sessile, and about the size of a walnut. On June 17th the tumour was removed in four pieces by the cold snare. It was examined and reported to be a large round-cell sarcoma. The patient did not return until July 17th, and then it was found that the growth had recurred, and was larger than at the time of operation. Partial laryngectomy was offered as the only chance, but the patient did not appear again for six months. At that time he had severe paroxysms of dyspnoea, particularly at night. Leaning forward at any time excited great difficulty in breathing. He had lost flesh. The tumour filled the larynx. The vocal cords could not be seen. On January 29th a tracheotomy was done because of an exceedingly bad attack of dyspnoea. A week later the growth appeared at the opening in the trachea. In another week it had reached up to the base of the tongue. For these two weeks he was more comfortable than before the tracheotomy, but his general condition did not improve. He died on April 27th. For six weeks

prior to death a large part of the fluid food taken would be regurgitated. The cough was a constant and distressing symptom. Codein was very effective in controlling this cough. There was slight hæmorrhage at times, and on one or two occasions it became very profuse. The sufferings of this patient were so pitiable during the last two months that, should another case present itself, he would more strongly urge operative interference at an early stage, death on the table being preferable to the course of this case.

Case II. A child of two years; respirations laboured, noisy, and rapid; cyanosis marked; child dull and only partially conscious. The right side of the nose was occluded by a yellowish white growth. The soft palate was pushed forward by another mass. The attending physician had seen the child first twenty-three days before. This child's symptoms had developed at the time that there were in the neighbourhood a number of children suffering from a catarrhal affection. Tracheotomy was performed, as the mother insisted upon some measure for the child's immediate relief, but it died shortly afterwards.

Dr. DENCH said that he had seen a case of sarcoma of the naso-pharynx within a year or two. It had come to him with aural symptoms. These came on after *la grippe*, the patient complaining of severe headache on the affected side. The middle ear on this side was found to contain considerable serum. This was a simple effusion and was not due to an inflammatory process. The vault of the pharynx contained a mass which resembled hyperæmic lymphatic tissue. As the patient was fifty-five years of age, Dr. Dench removed a piece of this tumour and had it examined, believing that it was malignant. The report of the pathologist, that the fragment examined indicated that the growth was a fibro-lymphoma, led him to advise its removal with the curette and forceps. He also advised against any surgical interference with the middle ear or mastoid. As this course of treatment gave no relief he suggested later an exploration of the middle cranial fossa. An exploratory craniotomy was done by Dr. Keen, of Philadelphia. The patient died shortly afterwards, and the pathological examination showed the growth to be a small-cell sarcoma.

Dr. J. E. NICHOLS said that he had met with four cases of sarcoma of the naso-pharynx. On two he had operated, and in two he had refused to operate. All four died. One of the operative cases lived for two years, and then died from an extension of the growth in all directions. As the growth was usually situated so far back, considerable progress would have usually been made before the condition was diagnosed; hence the difficulty in deciding upon operation. While a radical operation might prolong life, cure was impossible. Regarding operations on the larynx, the speaker said that one hesitated between the desire to effect a cure and the desire to relieve symptoms. He had met with three cases: in two the growth was in its early stage. The two died within ten days—one of septic endocarditis, in spite of precautions against sepsis, and the other from an unknown cause. The third case, apparently the worst of all, lived the longest. In all these cases complete extirpation of the

larynx was done. He thought that personally he would prefer to let the disease take its course rather than submit to operation.

Dr. T. PASSMORE BERENS (New York) said that he had had four cases of malignant disease of the larynx. Two of them had been operated. One died of septic endocarditis ; the other, probably, from an extension of the inflammation to the *vagus* nerve. He recalled a case in which the man had suffered dreadfully for eighteen months, and probably would suffer in this way for six months more, and raised the question as to whether or not most people would prefer the operation. Personally, he favoured early operation, and, where there was only slight glandular involvement, even a rather late operation.

Dr. MYLES said that he had seen several cases of malignant disease of the larynx and pharynx. Last year he had met with two cases in the larynx—one refused operation and the other accepted. The one who was operated upon about a year ago was to-day apparently well. The other one, who had had tracheotomy performed, had had nothing but misery, and was anxious to die. A few months ago a case of undoubted sarcoma had come under observation. The soft palate and part of the constrictor muscles had been removed, and the dissection had been carried down along the important vessels of the neck. The growth was removed by the electro-cautery. The wound had healed kindly, and so far there had been no recurrence. A portion of the muscles had also been removed, because the microscopist's report indicated that the disease had spread into the muscular tissue. It would seem, therefore, that there was an advantage in operating on these cases.

Dr. SCHEPPEGRELL reported a case which is interesting on account of the fact that, when it first came under observation, it appeared to be fibroma, while later it became distinctly sarcomatous, and proved fatal. In this case he had completely cleared the naso-pharynx by the active use of the snare and the cautery, but a recurrence took place, and the physician by whom the patient was treated used electrolysis. Whether this tumour had been sarcomatous from the first and became malignant from irritation, or was malignant from the first, it is difficult to state. Both the clinical and the microscopic examination indicated fibroma in the early stages and sarcoma in the later.

Dr. HALSTED, in closing, said that cases of sarcoma should not be confounded with cases of carcinoma of the larynx. One person with carcinoma of the larynx, on whom he had done tracheotomy two and a half years ago, had been very comfortable ever since, and to-day is in as good flesh as three years ago ; follows his avocation of taxidermist, and during the past year has frequently shouldered his gun and gone alone into the woods on shooting trips. Apart from his loss of voice and increasing difficulty in swallowing, he gets along very well. The glands of the neck are greatly swollen and hard, the laryngeal infiltration is constantly extending, and now reaches up into the pharynx. There is, as yet, no evidence of secondary deposit, and no cachexia, the most threatening symptom at present being the dysphagia.

The cases reported, however, are sarcomata. The first one is of

interest because of the great size of the tumour, reaching in a few months from the larynx up into the naso-pharynx. The second case—that of the naso-pharynx—is unusual, because of the age of the child and the rapidity of growth.

Dr. JOHN A. THOMPSON (Cincinnati) read a paper on *Inflammations*, and said that by intratracheal injections we get the direct action of the remedy on the diseased area. There were many proofs that tracheal injections were speedily absorbed, and they had the advantage of not being changed by the digestive processes as they were when taken into the stomach. The cure of a bronchitis by such direct medication, without interfering with digestion or appetite, was a distinct advance in therapeutics. In tuberculosis there was a mixed infection—a secondary infection with the germs of suppuration. A little menthol injected into a trachea would give greater and more prolonged relief than a large dose of morphine given by mouth. The remedies should be soluble in the vehicle employed, the solutions should not be very irritating, and the drugs so used should be capable of volatilizing slowly at the temperature of the body. He had first become convinced of the great value of this method by observing its excellent results in pulmonary tuberculosis and chronic bronchitis. Where the remedies were not irritating, it was not necessary to use cocaine previously. He used from one drachm to four drachms at a sitting, and ordinarily there was but little coughing or strangling.

Dr. S. E. SOLLY (Colorado Springs) said that he had used the intratracheal injections in some cases, but was inclined to believe that their application was quite limited in the hands of the general practitioner. He had found that the use of medicated vapours with the globe inhaler was a very good substitute for the intratracheal injections if employed with a good air pressure. The syringe that he had used for the intratracheal injections was a modification of Dr. Chappell's syringe.

Dr. HOLBROOK CURTIS said that he had made use of an ordinary Cheseboro muriate of ammonia inhaler, which gave a very soft and pleasant vapour of nascent muriate of ammonia in combination with some aromatic essential oil. By adding a few drops of beechwood creosote to this mixture he had found the apparatus very useful, if put in the hands of the patient, and the latter instructed to use it frequently every day. The beneficial results were very remarkable, and the frequent inhalations resulted in a marked development of the apices of the lungs. For a number of years past he had used iodoform and ether by inhalation spray, with much satisfaction, in cases of laryngeal as well as in pulmonary phthisis. Strangely enough, this subject had been very generally overlooked by the profession.

Dr. CLINE said that he was convinced that he had benefited many cases of chronic bronchitis and tubercular disease by mean of similar inhalations. In this connection Dr. Cline presented a little apparatus that he had devised for the purpose of warming sprays. It consisted of an iron box, in which an incandescent lamp was placed, together with

a stand holding six spray tubes. By a proper arrangement of dampers the heat could be very easily regulated.

Dr. LOGAN said that it was very difficult to get medicated solutions carried into the lungs before condensation took place. The medicament must be suspended in some fine oil, and a very fine nebulizer must be used. By the intratracheal method this difficulty should be largely obviated. The syringe should have a sufficiently large barrel to allow of making the whole injection at one time.

Dr. SPRAGUE asked if Dr. Thompson had ever observed any pulmonary complications following the use of these intratracheal injections.

Dr. THOMPSON said that in chronic tuberculosis the symptoms had been aggravated by these injections. They were not tolerated in the first stage of acute bronchitis before there was any secretion, and the injections might cause an asthmatic attack, lasting perhaps for several hours. He believed that the same results could not be obtained from inhalations as from intratracheal injections. The difficulty, as had been stated, was the rapid condensation of the vapour in inhalation treatment. Only a small proportion of the remedy could reach the lungs in this way. The superiority of the method of intratracheal injections was due to the comparatively large dose that could be used, and the thorough saturation of the air in the lungs with the vapour. The gradual absorption of this vapour was what gave the prolonged effect of the remedy. A German investigator had shown by careful experimentation that guaiacol was much more efficient when introduced into the system unchanged by the digestive fluids.

Dr. ARTHUR G. ROOT (Albany) reported a case of *Primary Syphilitic Infection of the Tonsil* in a man who had had reasonably good health up to an attack of gonorrhœal rheumatism in the spring of 1894. During March and April of 1896 the patient contracted a cold, which affected the tonsil. The next month the same tonsil again troubled him, and it became painful and inflamed in June. At this time the man noticed a few blotches on the abdomen. When seen two weeks later the tonsil was the seat of a greyish ulcer, and the sub-maxillary and cervical glands were enlarged. The patient was given the proto-iodide of mercury and a saturated solution of iodide of potassium. The throat was kept in good condition by local applications, and at the present time the local and general conditions were good. In commenting upon the case the speaker said that after a careful investigation he had come to the conclusion that the lesion was probably the result of kissing.

Dr. RENNER said that he had seen two cases of this kind, both of which had deceived him for two weeks, or until the secondary symptoms had developed. In both, his original diagnosis had been quinsy. He inquired the reason for using iodide of potassium so early in the treatment of the case reported.

Dr. ROOT said that he did not believe in the division of syphilis into primary, secondary, and tertiary, the line of demarcation being too vague. In a general way he approved of using iodide of potassium in the later stages chiefly.

Labyrinthine Phenomena dependent upon Middle-Ear Disease and their Relief by Local Treatment.

Dr. EDWARD B. DENCH (New York) said that in the class of cases under consideration physical examination would reveal a considerable retraction of the drum membrane, and sometimes slight congestion of the manubrial plexus and peripheral plexus. The calibre of the Eustachian tube was slightly reduced, and the air entered the tympanum on catheterization, but produced a rough sound indicative of thick mucus adherent to the wall of the canal. Frequently the inflation caused a moderate amount of vertigo, and there was often slight temporary improvement. Sometimes rarefaction of the air in the middle ear would cause concussion; the ossicular chain would be displaced inwards with considerable violence, and the stapedius and tensor tympani muscles being unable to take up the sudden pressure, the result would be concussion and trauma. This condition was found most frequently in neurotic persons. The fact that the functional examination showed no interference with sound conduction did not affect the value of this examination; it pointed out a hyperæsthetic condition of the apparatus. Treatment should be instituted early. These cases would often prove misleading unless the appearance of the drum membrane, the condition of the Eustachian tube, the history of the case, and the result of the functional examination were all considered.

Dr. SNOW said that about a year and a half ago a patient had come to him in whom the hearing in one ear had been nearly destroyed. The bone conduction was so much impaired that he looked upon the case as one of labyrinthine trouble. The other ear was the seat of considerable catarrhal disturbance. A very unfavourable prognosis was given regarding the poorer ear. He treated the nasal passages, and then turned the case over to an assistant. About six months from that time the great improvement obtained had led him to question very much the original diagnosis, and to believe that too much dependence should not be placed on diminished bone conduction when venturing a prognosis. The paper just presented was an excellent elucidation of the subject, and right in line with the conclusion found by his personal experience.

Dr. HOLT said that some fifteen years ago he had made examinations of the ears of boilermakers. His investigations demonstrated the fact that all men who work at boiler making for any length of time become deaf. This is also true of any class of persons who work where there is a continuous noise. His investigations led him to believe that it was untrue that any person could hear better in a noise than in a quiet place. It was an apparent condition only. Dr. Roosa took exception to these opinions, and also claimed that with a certain amount of deafness, if a tuning-fork was heard longer by air than by bone, it was indicative of labyrinthine disease. He had met people with this degree of deafness who could hear a tuning-fork longer by bone than by air conduction, and after treatment for this condition would change about so that the tuning-fork would be heard longer by air than by bone conduction, although there was no material change in the hearing power for conversation. He had been unable, therefore, to deduce any rule bearing upon this point.

Dr. DENCH agreed with Dr. Holt's remarks regarding hearing in a noise. It seemed to be true, however, in cases in which the middle ear was involved, that there was paracusis, and that where the middle ear was not involved paracusis was not present. With reference to the reversal of the relative duration of bone conduction to air conduction, he would say that many mistakes had been made. The point at which air conduction became greater than bone conduction in cases of defective hearing due to a middle-ear lesion, depended entirely upon the degree of deafness. If the hearing were slightly impaired, bone conduction would exceed air conduction for the lower notes of the scale only. The test should be made through a large part of the musical scale.

Dr. SCHEPPEGRELL stated that there is one view of the subject which had not been referred to, and that is the faculty of lip-reading, which is usually early developed in persons with defective hearing. When speaking in a noise persons articulate more deliberately and distinctly, which facilitates this lip-reading; and where a person with defective hearing seems to hear better in a noise, it may only be apparent, as his faculty of lip-reading gives him advantage over persons with ordinary hearing.

ABSTRACTS.

DIPHTHERIA, &C.

Fullerton, Alexander G. R., and Williams, A. Llewellyn.—*The Conveyance of Diphtheritic Infection by Apparently Healthy Individuals.* "Lancet," Oct. 23, 1897.

THE nature of the observation is fully indicated in the title. The authors further observe that the Klebs-Löffler bacillus may be found in the throat of an apparently healthy individual under two sets of conditions. Of these, the cases of more frequent occurrence are those in which the bacillus persists in and about the throat for a more or less lengthened period after complete convalescence from an attack of diphtheria. The other class of cases comprises those in which the bacillus exists in the throat of an individual, such as a nurse, who has been exposed to the risk of infection, but has escaped an actual attack of the disease. Cases which come within the first class are not by any means rare. But it is difficult to know the precise value to be attached to any figures bearing on the subject, unless one at the same time knows the treatment which has been adopted in the various cases, since the persistence of the bacillus is without doubt largely influenced by the method of local treatment adopted during the acute stage of the disease and afterwards. The most striking instance recorded is a French case in which the bacillus was still to be found in the throat at the end of fifteen months. But so prolonged an infection as this must be quite exceptional. Out of some four thousand bacteriological examinations in cases of diphtheria, or of suspected diphtheria, which have been carried out at the British Institute of Preventive Medicine, the case in which the longest duration of the bacillus has been noted is one in which it was found by Dr. Hewlett at intervals during twenty-two weeks. In this case, as in the present one, the virulence of the culture was proved by experimental

inoculation. Cases, again, in which the bacillus is still present three weeks or so after convalescence are in the experience of the Institute of not infrequent occurrence.

The recognition of these cases is, it is scarcely necessary to say, of extreme importance from the public health point of view. They explain, for example, that recrudescence of diphtheria which is sometimes coincident with the reopening of schools. They explain also the occurrence of a series of outbreaks with irregular intervals at schools, such as the instance this article particularly refers to. And in passing it may be pointed out that it is such outbreaks as those mentioned which, in the absence of obvious evidence of the conveyance of infection from one patient to another, led in the past to the belief in the intimate causative relation between defective drainage and diphtheria—a belief now discarded because of the greater exactness in tracing causation which we owe to bacteriology. Medical men generally are now quite aware of the necessity for a bacteriological examination before a convalescent diphtheria patient can for the sake of others be safely released from isolation, however perfect the recovery may appear to be clinically. To this a further rule might with advantage be added: that after a school has been closed temporarily because of an outbreak of diphtheria, no scholar should be readmitted without a bacteriological examination of the throat, whether there is a previous history of diphtheria or not.

St. Clair Thomson.

McAlister, Alex.—*Diphtheria Antitoxin.* "New York Med. Journ.," Sept. 25, 1897.

THE writer comments on the extensive use of the antidiphtheritic serum within the past few years, and notes the marked and significant withdrawal of the fierce opposition that met its first introduction into therapeutic science. The serum he regards as a specific in the full sense of the term, and he quotes Holt in support of his statement. Investigation has shown that, under antitoxin treatment, seventy-three per cent. of operative cases of laryngeal diphtheria recovered, and that only thirty-nine per cent. of cases so treated required operation; while under calomel there were only twenty-seven per cent. of recoveries, and ninety per cent. required intubation. Unsatisfactory results are, in many cases, due to a weak antitoxin, while a reliable and concentrated product given in suitable doses, and repeated, if necessary, within twelve hours, will reduce the general mortality of diphtheria to less than four per cent., and that of laryngeal diphtheria to less than ten per cent. The fear of untoward results from the injections of the serum is utterly groundless, for of the upward of two million injections made in all parts of the civilized world, it is admitted that only five deaths occurred that could not be satisfactorily explained, and, on the other hand, they cannot be proved to have been caused by the serum. A great deal of the success of the serum treatment depends on the proper adjustment of the dose, and the author recommends the following rules:—In ordinary pharyngeal cases, one thousand units to be given immediately on making a diagnosis. If the case comes under observation late, or if the disease is laryngeal or one of membranous croup, double this quantity must be administered; and in every case, if the disease is not arrested or there is evidence of an insufficient amount having been given, the dose is to be repeated or doubled within twelve hours.

Sandford.

Payne, Fra D. (Linden, Iowa).—*The Treatment of Forty-three Cases of Diphtheria with Antitoxin.* "Med. News," Oct. 9, 1897.

NOTES of forty-three cases of diphtheria treated by antitoxin, the initial dose employed being in no case less than a thousand units. The author believes the

rapidity of the action depends greatly on the freshness of the preparation of anti-toxin. Forty-two out of the forty-three cases recovered without any serious symptoms. *St George Reid.*

MOUTH, &c.

Gerhardt.—*Macroglossia.* "Münchener Med. Woch.," Nov., 1897.

THE author reports a case of macroglossia congenital in a child, who afterwards died from exhaustion, the hypertrophy interfering with nourishment. Two forms of macroglossia: (1) hypertrophy of connective tissue and muscle, and (2) hypertrophy of lymphatics and blood vessels.

Gleitsmann, J. W.—*The Treatment of Chronic Affections of the Fauces; with Demonstration of Instruments.* "New York Med. Journ.," Sept. 4, 1897.

IN chronic tonsillar inflammations characterized by the presence of a white exudate plugging the crypts on the surface, the author insists on thorough exposure of the whole of the diseased surface, and for this purpose speaks highly of a small so-called "palate hook," by means of which the anterior pillar is readily pushed aside. Mere removal of the exudates with subsequent applications is not sufficient; the crypt must be enlarged to effectually prevent their re-formation. For this latter purpose the author was in the habit of using Moritz Schmidt's blunt hook, but, as the use of this instrument is often very painful, he has had its side sharpened, retaining its blunt tip. In another much rarer affection, where the tonsil is more or less extensively covered by a flap of a dense membranous formation, he has devised a tonsillar clipper for the removal of the latter. This instrument is a modification of Ruault's punch, the blades being reversed, and cutting in a horizontal instead of in a vertical plane. *Sandford.*

Lewis, Robert.—*Angio-neurosis of Tongue due to Application of Chromic Acid to Tympanic Membrane.* "New York Med. Journ.," Oct. 9, 1897.

THE patient, a woman of forty-eight, was of average good health, not neurotic, and certainly with no hysterical tendency. She was suffering from left chronic otitis media for a number of years. The author cauterized with chromic acid some granulations on the upper and posterior parts of tympanic membrane, and about twelve hours after the application the patient's tongue began to swell rapidly, and for a few hours seriously embarrassed her breathing. The swelling, however, subsided after some hours. Six months later she again consulted the writer for the ear trouble, and chromic acid was again employed for the same purpose as before. In about twelve hours after her tongue, for the second time, began to swell, and to such an extent interfered with her respiration that a tracheotomy was seriously considered. The swelling, fortunately, yielded to milder measures. The case was evidently one of angio-neurotic cedema, and for various reasons the author feels warranted in concluding that the cedema must in some way be due to active stimulation of the chorda tympani nerve. *Sandford.*

Raugé.—*Traumatic Paralysis of the Soft Palate.* "Arch. Intern. de Lar., Otol., et Rhinol.," Sept. and Oct., 1897.

THE case of a perfectly healthy man of fifty-nine, who accidentally fell, striking the side of the neck on the edge of a box. Consciousness was lost for about an hour, and, immediately on its return, the voice was found to have a nasal quality, and fluids were rejected through the nose on swallowing. There was slight

epistaxis, but no hæmorrhage from the ear. There was no swelling or ecchymosis about the injured region. Pain was experienced behind and over the left ramus of the jaw, and the head was turned with difficulty. Further examination showed the palate to be completely and symmetrically paralyzed. Sensibility of the parts was intact, but the palate reflex was entirely absent. There was no trace of paralysis of the facial or other muscles, with the exception of marked symmetrical hyperacusis, presumably due to interference with the tensor tympani or stapedius muscles. Besides the paralysis of the palate and the hyperacusis, no other symptoms were present—beyond some dryness of the mucous membrane and a questionable impairment of taste. The subsequent history is not given.

The author makes a critical inquiry into the traumatic nerve lesions which could possibly have produced these phenomena. He is unable to arrive at a definite conclusion, but suggests the possibility of a circumscribed hæmorrhage in the anterior motor column, or a fracture of the petrous bone not involving the facial, but injuring the intermediary nerve of Weisberg.

Ernest Waggett.

NOSE, &c.

Breitung, Max (Coburg). — *Foreign Body in the Nose.* "Deutsche Med. Woch.," Nov. 18, 1897.

THE author reports a case of a boy, five years old, who had suffered for three months from loss of appetite, disturbed sleep, and a bloody purulent discharge from the nose. The skin over the nose and neighbouring part of the cheek was swollen, slightly reddened, and sensitive. The upper lip was ulcerated by the bloody, bad-smelling discharge. Nostril was completely blocked. Examination revealed a mass covered with pus, which was removed with forceps. It proved to be a piece of flesh, which the author thinks must have been forced into the nose by coughing. He points out the danger of forcing pus into the ears in these cases by either inflation or syringing through the other nostril.

Bryan, J. H.—*A Neoplasm of Nasal Fossa.* "Proceedings of American Laryngological Association," May 4, 5, and 6, 1897. "New York Med. Journ.," Sept. 4, 1897.

THE patient, a man of twenty years, had for several years complained of symptoms of nasal obstruction. These were due to a growth in the left nostril, causing some projection externally of the nasal bone, and extending back into the naso-pharynx and occluding the left posterior nares entirely, and partly also the right. Proptosis was also present on the left side, and the tumour bled freely on the least interference. Several unsuccessful attempts were made by the author to remove it by the galvanic snare. The precise origin of the growth could not be determined, and it was suggested it might spring from the antrum of Highmore. As to its nature, there was also some divergence of opinion, and microscopic examination failed to decide between a fibroma undergoing inflammatory change and a fibro-sarcoma. It was agreed that naso-pharyngeal growths are more often of a benign character, but the doubtful origin of the tumour under consideration rendered such reasoning of little moment. Dr. Simpson was inclined to regard the case as "inoperable," while others (Solis-Cohen) suggested extirpation after access by Rouge's operation. The case afforded a very appropriate occasion to insist on the necessity of early diagnosis and radical operative procedure in cases of actual or suspected malignant growths in this region.

Sandford.

Bryan, J. H.—*The Treatment of Chronic Frontal Sinusitis by Means of an Opening through Anterior Wall of Sinus and Drainage through Nose.* "New York Med. Journ.," Oct. 2, 1897.

THE author notes the various anomalies occurring in this region, and their bearing on the chronicity of any morbid process involving the frontal and neighbouring sinuses. Great caution is therefore advised in any operative procedure on the frontal cavities, and, moreover, there are no reliable external signs to enable the surgeon to even approximately ascertain the size of the sinuses. The operation offering the best results is that originally recommended by Ogston, where an incision is made in median line, beginning at root of nose and extending for one and a half inches to two inches on to the forehead. The skin and periosteum are elevated, and a centimetre of bone removed by a trephine applied just outside middle line, and immediately above supra-orbital ridge. The sinus can then be thoroughly explored. The fronto-nasal duct is now located with a probe, and enlarged. After complete removal of all diseased tissue and antiseptic lavage, the lining membrane may be touched with a twenty per cent. solution of chloride of zinc. A self-retaining drainage tube is then introduced into fronto-nasal duct, and the wound is closed.

The report of an instructive case is appended, showing some of the difficulties met with in the treatment of this and similar conditions. *Sandford.*

Hopkins, F. E.—*A Case of Adeno-Carcinoma of the Nose.* "New York Med. Journ.," Nov. 13, 1897.

THE patient, a man of eighty-three years, had always enjoyed good health. No trace of cancer in his family history, but many of his immediate relations died of tuberculosis. Twelve years ago he began to suffer from nasal obstruction, attended by a watery discharge. Was seen by writer in April, 1897, when no treatment had been undertaken for the previous three years. Before this time, however, fragments of a nasal growth were removed from time to time. During the entire period of the nasal stenosis there had been no pain; epistaxis occurred at long intervals, sometimes during sleep. He complained only of the mechanical obstruction and the constant flow of acrid sanious mucus from the left nostril. The left side of the nose was deformed by the internal pressure of the tumour, and the left eye slightly protruded. With the cold wire snare the author secured a small fragment of the growth for examination, which showed it to be an adeno-carcinoma.

Sandford.

Leland, G. A.—*A Case of Adeno-Carcinoma of the Nose.* "New York Med. Journ.," Nov. 13, 1897.

THE patient, a delicate woman of fifty years, had for the past year complained of nasal obstruction on both sides, with pain and epistaxis. The case had a fatal issue, and microscopical examination of the growth showed it to be an adeno-carcinoma, and the specimen showed the primary adenoma, its transition to carcinoma, and a tendency in one part to papilloma. *Sandford.*

Packhard, Francis (Philadelphia).—*Amaurosis following Intranasal Operation, with a Review of some of the Uncommon Results of Operations within the Nose.* "Med. News," Oct. 9, 1897.

NOTES of a case of hypertrophic rhinitis where, following the removal of a portion of the hypertrophied tissue with the cold snare from the anterior extremity of the middle turbinate under cocaine, temporary blindness had occurred on the same side; the period of total blindness is stated to have been between twenty and thirty minutes. Careful examination by an oculist failed to reveal any cause for the disturbance of vision. Further nasal operative treatment of the same nature

was followed by no unusual disturbance. The author concludes by referring to cases of a similar nature observed by Ziem, Lermoyez, Rethi, and others.

StGeorge Reid.

Pyncheon, Edwin.—*Nasal Bougies and Drainage Tubes.* "New York Med. Journ.," Oct. 23, 1897.

THE writer finds fault with the several varieties of nasal drainage tubes at present used, inasmuch as the great majority of them on cross section resemble a flattened O, and therefore not properly adapted to the shape of the cavity they are designed for. As the septal surface of the nose is approximately plane, and the turbinal surface corrugated and convex, a device to meet the requirements of a proper drainage tube should have its inner side partly plane and partly convex, and its outer side concave. And on this principle he has constructed tubes which he holds possess great advantages over the others.

Sandford.

Sachs, Richard (Hamburg).—*Primary Tubercular Tumour in Nose.* "Münchener Med. Woch.," Oct. 19, 1897.

PATIENT, A. C., twenty, had nasal obstruction for four years, with frontal headache and intermittent epistaxis.

Both nares were filled with growths; lungs normal; sputum free from bacilli. Tumours were removed—two from right, one from left—largest was six centimètres by two and a half centimètres. Removal left a cherry-sized perforation in septum nasi. Microscopic examination showed tubercle. Headache disappeared; respiration was free. He considers there was primary perichondritis, followed by perforation and tumour formation. Four months later there was nothing to be seen but the perforation.

Turnbull, Laurence (Philadelphia).—*The Anæsthetic to be Employed in the Various Operations on the Nose, Throat, and Ear.* "Med. and Surg. Rep.," Sept. 18, 1897.

THE author treats principally of the relative value of eucaine and cocaine solutions in these operations, applied either with a cotton wool swab or fine spray. He also speaks well of a solution composed of a 5 per cent. solution of cocaine and 2½ per cent. solution of eucaine. He points out that solutions of eucaine are more stable than those of cocaine, that it is possible to sterilize the former by boiling, and that it is also less poisonous, but on the other hand the anæsthesia in some cases is not so satisfactory. He concludes by referring to their relative value in ophthalmic operations.

StGeorge Reid.

Wright, Jonathan.—*Papillary Œdematous Nasal Polypi and their Relation to Adenomata.* "New York Med. Journ.," Nov. 13, 1897.

THE writer traces the gradations in development from the ordinary mucous polypus through a benign adenomatous growth to a malignant one. He quotes a few very interesting cases, and has reproduced some instructive illustrations.

Sandford.

LARYNX.

Annandale, Thomas.—*Administration of Anæsthetics through a Tracheal Wound.* "The Lancet," Nov. 6, 1897.

In operations which have necessitated a previous tracheotomy, the patient can be kept under chloroform by leading a rubber tube from the mouth of the tracheal

canula into a tumbler in which there is a sponge or cotton wool moistened with the anæsthetic. The advantages of this are :—(1) It is simple and effectual ; (2) the rubber tube can be easily disconnected from the tracheotomy tube, so as to clear the latter ; (3) it allows the anæsthetic to be administered at some distance from the patient, and so does not interfere with the operative procedure ; (4) the anæsthetic is not likely to be so irritating to the air passages as when it is more directly inhaled through the tracheotomy tube itself. The mechanism is illustrated.

StClair Thomson.

Fleming, C.—*A Personal Experience of Malignant Disease of the Larynx.* "Lancet," Oct. 16, 1897.

THE author in this case was also the patient ! He is forty-nine years of age, and there is no history of malignant disease in his family. The first thing he noticed was huskiness or weakness of his voice—about two years ago. Except for the muffled voice he had no other discomfort whatsoever ; no pain, tenderness, swelling, dysphagia—and, in fact, he remained to the last in perfect health. In November, 1895, he consulted Sir Felix Semon, who discovered a small growth on the left vocal cord ; but it was not till July, 1896, that the symptoms were sufficiently marked to warrant a diagnosis. An exploratory operation was then advised, and the advice confirmed by Mr. Butlin. A most important feature in this interesting history is the opposition the patient had to undergo from his friends—professional as well as lay—when the operation was decided on. However, on the 21st July, 1896, tracheotomy, laryngo-fissure, and complete removal of the left vocal cord was performed. He made a good recovery, and his voice has improved wonderfully in tone and character. Under the microscope the growth proved to be a typical squamous-celled carcinoma. *StClair Thomson.*

Friedrich (Leipzig).—*The Changes in the Affected Muscles in Paralysis of the Inferior Recurrent Laryngeal Nerve.* "Fortsch. der Medizin," Oct. 15, 1897.

AFTER reviewing the work that has been done in these cases, the author goes on to describe the histological appearances of the laryngeal muscles in the case of a man forty-eight years old, who had been under treatment for aortic aneurysm for four years, during which time there had been paralysis of the muscles supplied by the left recurrent laryngeal nerve.

The larynx was hardened in formol and alcohol, and the microscope revealed the following changes in the muscles affected.

On transverse section the fibres are oval or round, and only a few completely fill out their sarcolemma. They are much atrophied, and in many instances look like small round pieces lying in the sarcolemma, which is much too large for them. In places they are completely destroyed, and what is left of them is represented by a faintly coloured substance, which *looks like fat cells.*

The longitudinal and transverse striæ are retained even in the much atrophied portions, but degenerative changes are evident from the fibrillæ being separated, and they do not take the stain readily.

The longitudinal section shows that they are not even in thickness, and that they do not stain equally. The paler fibres often present hazy contours, but the transverse striæ, and to a greater degree the longitudinal ones, are retained.

The interstitial connective tissue is increased very unequally ; *e.g.*, whilst in many places there is no trace of increase, in other places, notably in the m. vocalis and m. thyro-arytenoideus, there are bands of it. Since this occurs mainly in the most degenerated muscles, it is possible that the fibres with their sarcolemma are changed into connective tissue.

Very few nuclei are present, which is probably explained by the length of time of the existence of the paralysis. On the sound side the nuclei are increased. May this be due to the increased functional activity of these muscles?

No fat cells were found as a result of the degenerative changes, though they were found where they normally exist in the vicinity of vessels and nerves.

The degenerative changes were much more marked in some muscles than in others, *e.g.*, none in the interarytenoid and crico-thyroid, and a varying amount in the other muscles.

In the m. crico-arytenoid lateralis, thyro-arytenoid, and vocalis there was a certain amount, most marked in the last; but it was deepest in the posticus, where it is difficult to make out muscular structure.

All this shows that the histological changes follow Semon's observations; but whether the fact that this muscle shows signs of greater atrophy proves that it was first attacked, and that paralysis of the adductors ensued later, is not certain from microscopic observation.

Barclay J. Baron.

Laryngeal Stenosis and Intubation. Leading Article, "New York Med. Journ.," Oct. 16, 1897.

O'DWYER's tube seems occasionally to be productive of laryngeal stenosis, and, on the other hand, in stenosis from other causes it has proved remedial. Bayeux, of Paris, called attention to the fact that the majority of cases of stenosis occurred in children who had expelled the tube frequently during the treatment of their laryngeal or other trouble. Some of these stenoses were seated below the glottis; others, and they were the gravest, were situated at the level of the cricoid cartilage, where the larynx is narrowest. And, according to the same authority, repeated expulsions of the tube are symptomatic of laryngeal ulceration of the cricoid portion of the larynx. This portion should serve as the gauge for the size of the tube to be used, which would vary according to the child's age. He considered that neither a prolonged course of intubations nor tracheotomy was sufficient in the treatment of stenosis; it was better to perform crico-tracheotomy at once, since it was the cricoid portion of the larynx that was injured, and offered an obstacle to catheterism. In this way he treated two cases, and with speedy success.

Sandford.

Rosapelly.—*Further Researches on the Rôle of the Larynx in producing the Voiced and Voiceless Consonants (Speaking, Whispering, and Respiratory Voice).* "Arch. Intern. de Laryngol., Otol., et Rhinol.," Sept. and Oct., 1897.

THE author proves by tracings taken with a recording instrument that, whereas in producing a voiced consonant (such as *b* in *aba*) the vocal cords are in a state of vibration, no vibrations occur when a voiceless consonant (*e.g.*, *p* in *apa*) is produced. Secondly, by laryngoscopy, during the attempt to pronounce *apa* he finds that at the moment corresponding to the attempted production of *p* the vocal cords are abducted. When, on the other hand, *aba* is attempted, the vocal cords remain in apposition throughout the attempt. In whispering the vocal cords are responsible for an appreciable part of the sound produced. No apposition of the cords occurs, but the glottis is reduced to a triangular figure, with a very narrow base. Laryngoscopy during the attempt to whisper shows that the voiceless consonants are produced during momentary abduction of the cords. The laryngeal vibrations employed in whispering may be detected by placing a binaural stethoscope against the cricoid cartilage. No such vibrations are heard when the voiceless consonants are produced. The laryngeal sound of whispering is monotonous in

the strict sense of the word. By the term "respiratory voice" the author designates the voice produced with a widely open glottis. This phenomenon is observed after violent exertion which necessitates panting—*i.e.*, rapid, uninterrupted respiration. In the respiratory voice the mechanism of voiced and voiceless consonants does not differ; indeed, it may be said that all the phenomena of speech are mute, including even the vowels, so far as the larynx is concerned. *Ernest Waggett.*

Schmidt, Edmund.—*Cancer of the Larynx.* "Deutsche Med. Woch.," No. 5, Nov. 4, 1897.

EDMUND SCHMIDT, in Meissen, reports this case to show how the symptoms depend on the situation.

Patient was a woman fifty years old, and complained of slight difficulty in swallowing.

Nov., 1896. Examination showed a swelling on the posterior surface of the right arytenoid covered with normal membrane, circumscribed, and soft when felt by a probe. Slight impaired movement of the right cord, although they came together on phonation.

March, 1897. Intermittent pain on swallowing; in the middle of the swelling were two whitish grey nodes. Part removed, and showed simple flat-celled tumour. Another piece removed, four weeks later, showed cancer. Patient was operated on, and died from pneumonia.

Post-mortem showed cancer of œsophagus above the flat plate of the cricoid. Change in the arytenoid was a metastatic growth, which affected the crico-arytenoid joints and caused impaired movement of the cord. He points out, as an important and grave symptom, the impaired movement at the beginning and throughout the illness.

Uchermann, Prof. V. (Christiania).—*Laryngitis Acuta Rheumatica Circumscripta (Nodosa).*

RHEUMATIC affections of the larynx are not well known.

1. One form described is where, in acute rheumatism, the crico-arytenoid joint may be affected and eventually ankylosed.

2. Another form described by Ingalls (Ninth International Congress at Washington) under the name of "acute and chronic rheumatic sore throat," exhibited the following symptoms: slight fever; pain varying in intensity, especially on swallowing; strong injection in pharynx, and eventually in larynx, with no secretion.

3. Another form has been described as angina, or pharyngitis rheumatica.

4. There is another form, which is rare, well marked, and of great interest both for differential diagnosis and treatment.

This form is represented by definite, very sensitive, red or bluish red masses of hard infiltration, which may be as large as an almond; if near the crico-arytenoid joint, a false ankylosis, with fixation of the vocal cord, may be caused, and by improper treatment may be permanent. Many of the so-called rheumatic recurrent paralyses may be due to this peri-articular rheumatic inflammation; similar appearances are seen on the palate, septum nasi, inner part of meatus, and tympanum, analogous to erythema multiforme and nodosum.

The following cases are given:—

1. K. H. (nineteen years of age) six years ago had rheumatic fever for four days; he had pain in the neck, difficulty and pain on swallowing, with hoarseness. Present state: Patient is hoarse; pain on swallowing; no cough. Laryngeal mucous membrane injected; both false cords swollen. Pars arytenoidea sinistra and next part of the ary-epiglottic fold swollen and of a dark bluish red colour.

Left cord is fixed in cadaveric position—edge convex and swollen on the upper surface. Diagnosis was laryngitis acuta circumscripta rheumatica, with infiltration and false ankylosis of the crico-arytenoid joint.

He was treated with salicylate of soda. Four days afterwards pain ceased; eight days later swelling disappeared—only slight hyperæmia; vocal cord is movable. No history of syphilis or tubercle.

Case 2. T. P., forty-nine years of age. Four days pain in neck on swallowing; last night cough and hoarseness. Present state: Introitus laryngis injected—posterior part swollen. Partes arytenoidæ infiltrated, bluish, and cedematous. Vocal cords slightly injected—otherwise normal and movable. Recovery in two days, after use of salicylate of soda.

The author has also seen a third case, but gives no description.

Wallace, Alexander.—*Atonic Aphonia.* "Lancet," Oct. 30, 1897.

THE value of this report is, to a large extent, neutralized by the unfortunate absence of the report of any laryngoscopic examination. It appears to have been a case of hysterical mutism, and is interesting as occurring in an adult male.

StClair Thomson.

ŒSOPHAGUS.

Snyder, A. A.—*Œsophagotomy and Removal of Dental Plate with Upper Central Incisor Tooth.* "New York Med. Journ.," Sept. 18, 1897.

THE patient, a woman of twenty-two, had swallowed a broken dental plate, which had lodged in the œsophagus. She was seen the following day, when her voice was deficient, and she complained of much pain above the sterno-clavicular joint on the left side. Attempts at removal of the obstruction had failed owing to the extremely irritable condition of the mouth and pharynx, in spite of cocaine applications and ninety-grain doses of potassium bromide in three doses. After much difficulty a flexible bullet probe located the obstruction at five and a half inches from the incisor teeth, and an operation was advised and accepted. On the third day from the date of the accident the plate was removed. A two-inch incision was made along the inner edge of the sterno-mastoid muscle, the skin having first been drawn a little towards the median line so as to form a valvular opening. The jugular vein and common carotid artery were exposed. A long probe passed through the mouth into the œsophagus located the latter, which was then incised by a cut large enough to admit the little finger. The plate and tooth measured one and a half inches by one and a quarter inches. The patient made an excellent recovery. It may be added that the X rays failed to locate the foreign body in this case.

Sandford.

THYROID, &C.

Rodocanachi, A. J.—*Four Cases of Goitre treated by Operation, and Certain Dangerous Symptoms which may follow the Operation.* "Lancet," Oct. 9, 1897.

THE symptoms to which the author wishes to draw attention are essentially restlessness, a rapid pulse, rapid respiration, accompanied by a considerable

amount of mental anxiety, with, in certain cases, a fatal result. In the *post-mortem* of one case a careful dissection of the neck showed that there had been no damage to any of the main nerves. The remaining lobe of the thyroid gland was found to be extremely diseased—in fact, similar to the part removed. The trachea showed signs of compression; it contained no blood, secretions, or other obstruction internally. The other organs were normal. The pathology is discussed, and the author concludes that none of the important researches quoted offer any fundamental objection to the following propositions:—(1) That the symptoms described are similar to those of exophthalmic goitre; (2) that they are due, as in that complaint, to the absorption by the lymphatics into the circulation of a perverted secretion of the thyroid—not to the absence of normal thyroid; and (3) that in the cases where these symptoms have been most frequently seen after thyroidectomy—namely, after operation for exophthalmic goitre—it is due to squeezing out some secretion while handling the tumour; and that in the cases described it entered by the cyst being ruptured into the wound. Hence, the surgeon should take as much care in preventing the contents of the thyroid cyst from entering a wound as he does in dealing with a fluid tumour of the abdomen. Should the symptoms arise, the author suggests that the hypodermic injection of morphia seems to promise the best results.

St Clair Thomson.

Syms, Parker.—*Cyst of the Thyroid.* “Proceedings of the Soc. Alumni, Bellevue Hospital,” May 5, 1897; “New York Med. Journ.,” Sept. 11, 1897.

THE patient, a man of sixty, had had good health and a good family history. He first noticed the swelling twenty years ago, and complained of interference with his breathing. The cyst was completely enucleated, and owing to the shortness of patient's neck a long incision had to be made—viz., five inches—extending up from the suprasternal notch. From the upper end of this cut a second incision, three inches long, was made at right angles to the first. The gland structure was then incised, exposing the wall of the cyst; the latter was enucleated without removing any of the gland tissue. Hæmorrhage slight, chiefly venous, and easily controlled. The specimen was of oblong form, with a thin wall, and measured five and a half inches in its long diameter, and three and a half inches in its short diameter.

Sandford.

E A R.

Andérodias.—*Double Syphilitic Labyrinthitis.* “Arch. Intern. de Lar., Otol., et Rhinol.,” Sept. and Oct., 1897.

THE case of a man of thirty-seven, who had suffered with middle ear suppuration from childhood. Ten weeks after the development of a Hunterian chancre, which was followed by ordinary secondary phenomena, the hearing, which had previously been acute on the right side, was suddenly lost. Vomiting occurred during six days; vertigo was absent. On examination the right membrana tympani was found retracted, and mucus was present in the Eustachian tube. A whitish, well-defined plaque was seen on the membrane, and another on the meatal wall. Hearing was very much impaired, and bone conduction was almost completely absent, Rinné being markedly positive. On the left side a large polyp projected through a perforation, a lesion independent of the recent trouble. Bone conduction was considerably better than on the right side, but Rinné was nevertheless positive. Mercurial frictions were ordered, and four grammes of potassium iodide daily. In eight days the cure of the deafness was almost complete.

At the end of seven weeks the hearing apparatus was completely restored, both in appearance and function, to the conditions existing before the attack, with the exception of some remnants of the plaques on the right side. The tuning fork now showed Rinné to be negative on both sides.

Ernest Waggett.

Barr, Thomas, M.D., and Nicoll, J. H., M.B.—*A Case of Malignant Tumour of the Brain originating in the Middle Ear. Symptoms simulating Temporo-Sphenoidal Abscess; Opening of Mastoid Antrum and Cranium; Partial Removal of Tumour; Cessation of Respiration under Chloroform; Tracheotomy; Death Two and a Half Months after Operation.* "Brit. Med. Journ.," Oct. 16, 1897.

THE patient, a boy, aged twelve and a half years, was brought to the author, complaining of severe pain in the right ear. This pain had existed intermittently for three months; most intense at night, and returning without any special cause. There had been a slight discharge from the ear. The hearing power was markedly affected. There was no oedema of the tissues round the ear, and no enlarged lymphatic glands. In the external meatus a mass resembling a polypus was to be seen, exquisitely painful to the touch of a probe, and more vascular than the ordinary aural polypus. It appeared to spring from the walls of the tympanum. The growth was removed with a snare, its base touched with chromic acid, and a dilute spirit lotion ordered.

Four months later he was brought again to the author, the growth now being found to protrude from the meatus. It was again removed with the snare, cauterized, and treated antiseptically. Later on he again returned with a recurrence of the growth. On this occasion an extensive mastoid operation was performed and the growth cleared out as completely as possible. During all those months pain in the ear and in the head had been frequently present. The discharge from the ear had also continued. Shortly afterwards grave symptoms came on—persistent vomiting for several days, increased headache, subnormal temperature and pulse, great drowsiness, stupor, ocular paralysis, and optic neuritis, pointing, as was thought, to temporo-sphenoidal abscess. The operation of exploring for temporo-sphenoidal abscess was undertaken by Dr. Nicoll. The operation had, however, lasted only about ten minutes when the patient's respiration gradually became shallow and finally ceased, the pulse, however, remaining perfectly good. Artificial respiration was begun, and subsequently the trachea was opened. So long as artificial respiration was kept up the pulse and colour remained good, but on stopping the artificial respiration from time to time there was not the faintest attempt at spontaneous breathing. It was decided to open the skull at all hazards. This was accordingly done during the performance of artificial respiration, and the temporo-sphenoidal lobe was explored, but no pus was found. At a short distance, however, under the cortex a hardish mass was detected, and upon being exposed a firmish grey mass of tissue was found. With a small elevator portions of this growth were removed. After evacuating the larger portion of the then intracranial growth it became clear that the tumour sprang from the widely permeated petrous bone. All attempts to remove more growth were then abandoned, and the parts were packed with an aseptic dressing. For a time the symptoms were relieved, but soon returned in severity. At the end of a fortnight optic neuritis occurred in the left eye, rapidly followed by atrophy and blindness. On two separate occasions portions of a hernia cerebri were sliced off. Death subsequently ensued from gradually deepening coma.

On *post-mortem* examination the growth was found to be of firm texture and attached chiefly to the floor of the middle fossa, but was considered by the author to have originally sprung from the cavity of the middle ear; the clinical history

also showing that the extension upwards into the middle cranial fossa was probably a much later event, and followed also by more rapid progress. The microscopic examination showed the growth either to be a soft and cellular carcinoma or a sarcoma of the so-called "alveolar" type. The author regarded it as more probably of sarcomatous origin, partly on account of the patient's age, and partly on account of the clinical history of the case.

W. Milligan.

Bronner, Adolph.—*Cholesteatoma of the Attic of Twenty Years' Duration simulating Disease of the Mastoid Process.* "Lancet," Oct. 23, 1897.

THE interesting features of this case seem to be (1) that the attic had been affected for twenty years, and the disease had not spread into the mastoid antrum or cerebral cavity; (2) that disease of the attic should have caused such extensive and repeated attacks of periostitis of the mastoid process; (3) that the cholesteatoma should have formed in the attic, and not in the mastoid cells, as is generally the case; and (4) that the wound was kept open and allowed to heal up from below by granulation, as suggested by McEwen and Victor Horsley. The method generally adopted is to try to keep a large permanent opening above or behind the ear.

StClair Thomson.

Eagleton, W. P. (Newark, N. J.).—*Ear Complications of Influenza.* "Med. and Surg. Reporter," Oct. 30, 1897.

THE author calls attention to the aural complications attending epidemics of influenza, pointing out that not only does it light up old or dormant ear mischief, but also seriously affects previously normal ears. How far this is absolutely due to invasion by Pfeiffer's bacillus he is doubtful, but in the cases of catarrhal otitis so frequently complicating influenza he considers two or three conditions as distinctive. Firstly, three distinct forms of otitis with hæmorrhage into the membrana tympani; secondly, primary mastoiditis or periostitis before the involvement of the middle ear, probably due to direct invasion by the bacillus; thirdly, rapid caries and necrosis of ossicles or mastoid. He considers that the presence of the influenza bacillus exercises a very unfavourable influence on the bony structures of the ear, often converting apparently simple cases of acute suppurative otitis into very malignant ones, with rapid destruction of bone, and this without marked symptoms. He advocates early paracentesis in these cases, and avoidance of delay in opening the mastoid should it show signs of becoming involved.

StGeorge Reid.

Hoover, Pierce F.—*Otitis Media Suppurativa Acuta from Swallowing a Pin.* "New York Med. Journ.," Oct. 30, 1897.

THIS was a very interesting case, where a child of two years suffered from a discharge from left ear for four days, with severe pain, which was relieved somewhat after appearance of discharge. It was ascertained that two months previous the child had swallowed a pin. Emetics were then given with the object of dislodging the offending body, and as no other symptoms save a sore throat followed it was assumed the pin had come away and been overlooked in the vomit. After careful inspection of the ear the author succeeded in extracting the pin, *point* first. It was about a quarter of an inch long. He believes that the pin was forced into the Eustachian tube by the vomiting, and then worked its way into the tympanum, from which it was removed. The child was seen three months later, and the ear trouble had completely disappeared.

Sandford.

Lane, W. Arbuthnot.—*Antrectomy as a Treatment for Chronic Purulent Otitis Media.* "Clin. Journ.," Oct. 13, 1897.

ANTRECTOMY means the complete obliteration of the antrum, and is only a carrying out of the principle of Schwartz's operation. Some important points

regarding the antrum are not properly understood. (1) The antrum has no anatomical or physiological relation with the mastoid or its cells, but is part of the middle ear; (2) its chief, if not sole, function is to secrete mucus to moisten the middle ear; (3) only in a small number of cases does the mastoid contain large spaces or cells, and the presence of dense bone is not, as often supposed, the result of chronic inflammation; (4) the healthy antrum may become continuous with the mastoid cells, by the latter in their development encroaching on the former, or a diseased and distended antrum may encroach on the mastoid cells; (5) the chief function of the membrana tympani is to prevent evaporation of the secretions of the middle ear and antrum.

Mr. Lane's method is to open antrum with mallet and gouge, scrape with sharp spoon, remove overhanging bone so as to make inner wall of antrum the apex of a broad-based cone. This cavity is plugged with gauze till the skin forms a dimple over the obliterated inner wall. If middle ear is much diseased its contents are cleared out, and the communication with the antrum enlarged by removing portions of its outer boundary. In skilful hands the operation has no risk, and "restores almost perfect hearing." The author has never injured the facial nerve.

Middlemass Hunt.

Richardson, W. L., and Walton, G. L. (Massachusetts).—*Case of Temporo-Sphenoidal Tumour, presenting Symptoms suggestive of Abscess.* "Boston Med. and Surg. Journ.," Aug. 19, 1897.

CASE of small-celled glioma of the brain, originating from the two first temporal convolutions of the right side, which, in its early stages, gave rise to symptoms resembling those of abscess consequent on otitis media—the patient having suffered for many years with pain and discharge from the right ear.

St George Reid.

Tousey, Sinclair. — *Thiosinamine: its Use in the Treatment of Keloid "Inoperable Tumours" and Cicatricial Conditions, including Deafness.* "New York Med. Journ.," Nov. 6, 1897.

THIS drug, derived from oil of mustard, and of the same chemical group as urea (urea = $\text{CO}, \text{NH}_2, \text{NH}_2$; thiosinamine = $\text{CS}, \text{NHC}_3\text{H}_5, \text{NH}_2$), is reported by the writer to be of undoubted value in keloid and other cicatricial conditions. It will be remembered as first spoken of in connection with tuberculosis, on which, however, it was found to have no curative influence. It is said to produce softening of cicatricial growths, and at first to cause disintegration of the white blood cells, which is followed by a leucocytosis, persisting for forty-eight hours. In keloid the author has employed it with success, and in deafness due to a cicatricial condition of the tympanum he records very favourable results from its internal administration, combined with inflation. He recommends a hypodermic solution of ten parts of thiosinamine in one hundred parts of a sterilized mixture of water and glycerine, and he injects twelve or fifteen minims into triceps or glutei every three days. Others give the drug in three-grain doses.

Sandford.

Woodward, John F.—*Intracranial Complication following Acute Suppurative Inflammation of Middle Ear, with a Case.* "New York Med. Journ.," Oct. 9, 1897.

THE patient, a healthy and robust man of forty years, got an attack of acute suppurative otitis media. The drumhead ruptured, and a free discharge took place. After a few days symptoms of acute lepto-meningitis set in, and the patient died on the seventh day from the beginning of the illness. A few days previous to the man's death an operation was performed, and the mastoid sinus exposed and found healthy, while the floor of tympanum was denuded of its mucous lining. A *post-mortem* was not found practicable.

Sandford.

NEW PREPARATION.

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This "tabloid" overcomes all the objections which have been raised to the syrup or fluid form of this valuable combination of the phosphates of iron, calcium, potassium, and sodium. There is no difficulty in securing its administration regularly, and without objection on the part of young or sensitive patients who cannot or will not take fluid medicines. The dosage can be regulated with exactness and without fear of error, since each "tabloid" contains an accurately adjusted quantity of each of its ingredients. "Tabloid" Chemical Food is easily taken because of its small size and sugar coating. The therapeutical users of this preparation need no bush. A marked advantage possessed by "Tabloid" Chemical Food over similar combinations in fluid form is that it does not stain the teeth.

"Tabloid" Chemical Food (Phosphates Compound) is supplied in two sizes— $2\frac{1}{2}$ gr. and 5 gr.—representing $\frac{1}{2}$ and 1 dram of a standard compound syrup of phosphate of iron. Each size is supplied, sugar-coated, in bottles of 25 and 100.

APPOINTMENTS.

Dr. BERNHARD FRANKEL has been promoted to an Honorary Professorship of Laryngology and Rhinology.

H. B. ROBINSON, Esq., M.S., F.R.C.S., has been appointed Surgeon to the Throat Department, St. Thomas's Hospital, London.

F. SPICER, M.D. (Durham), appointed Surgeon to the Metropolitan Hospital for Diseases of the Throat.

THE ROYAL PHOTOGRAPHIC SOCIETY

is organizing an International Exhibition of Photographic Apparatus and Photographs, which will open at the Crystal Palace on April 27th.

In addition to the usual displays of pictures, etc., there will also be extensive loan collections, illustrating not only the history of photography, but its enormous scientific and commercial applications, photo-mechanical processes, photographs in colours, photographs by means of the X rays, and kindred exhibits.

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THE PHYSIOLOGICAL AND PATHOLOGICAL RELATIONS BETWEEN THE NOSE AND THE SEXUAL APPARATUS OF MAN.¹

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"Balnea, vina, Venus corrumpunt corpora nostra,
Set vitam faciunt, b(alnea), v(ina), V(enus)."²

Οἶνος καὶ τὰ λουτρά καὶ ἡ περὶ Κύπριν ἐρωὴ
ὀξυτέρην πέμπει τὴν ὁδὸν εἰς Ἀίδην.³

Mr. President and Gentlemen,—The limited time at my disposal this morning precludes an elaborate discussion of the propositions which form the text for these remarks. I shall, therefore, content myself with a brief statement of the conclusions which I have reached after a careful study of the subject, and shall not weary you with the arid narrative of individual cases.

The injurious effects of undue excitation or disease of the generative apparatus upon the organs of sight and hearing are matters of ancient recognition. That immoderate indulgence in venery may lead to derangements of the former was familiar to Aristotle,⁴ and that the fathers of medicine recognized some mysterious connection between the ear and the reproductive functions is evident from the testimony of Hippocrates.⁵

¹ Remarks made before the British Medical Association at its Montreal Meeting, Sept., 1897.

² An old inscription found in the Campus Floræ in Rome. See Buecheler's "Anthol. Latin. Carmen. Epigraphic," Fasc. II., p. 705, No. 1499, Teubner edit., 1897. Also "Corpus Inscript. Latin.," VI., 15258, Gruter 615, 11, Orelli 4816, etc. It is attributed, however, by Scaliger to a modern poet.

³ The supposed Greek original. See "Antholog. Palatin." X., 112.

⁴ Aristot. "Opera omnia Græco-Latin." Parisiis, 1854. "De animalium generatione," lib. ii., cap. 4.

⁵ "Opera omnia. Ed. Kuhn, Lipsiæ, 1827, tom. i., p. 562.

Over two centuries ago Rolfinc⁶ wrote: "*Qui partibus genitalibus abutitur, et sexto præcepto vim infert, male audit*," a proposition which has been fully established by the clinical experience of to-day.

The intimate relationship between the genital organs and those of the throat and neck seems to have attracted the special attention of the ancients. Thus Aristotle⁷ clearly defines the changes in the voice at puberty, and the effect of castration on its qualities.⁸ Its harsh, irregular and discordant character during the maturation of the sexual functions was furthermore affirmed to be more conspicuous in those who attempted the early gratification of the sexual appetite. The observation that, during coitus, the voice becomes rougher and less acute, led the *phonasci* or voice-trainers to infibulate their pupils, or confine the penis with bands and fetters, to preclude indulgence in wantonness;⁹ whilst the popular idea of the injurious effect of repeated coition upon the singing voice is reflected in the epigram of the Roman satirist:—

"Cantasti male, dum fututa es, Ægle,
Jam cantas bene; basianda non es."¹⁰

The supposed influence of sexual excitement upon the external throat is likewise apparent from the ancient nuptial ceremonial. Before the virgin retired on the wedding night it was customary to measure her neck with a tape, and again on the following morning. If the neck showed an increase in size it was taken as a certain indication of defloration, whilst if the two measurements were equal she was supposed to have retained her virginity. This curious test, which has also been utilized to establish the fact of adultery, has been transmitted to us in the Epithalamium of Catullus:—

"Non illam nutrix, oriente luce revisens,
Hesterno collum poterit circumdare filo."¹¹

Whilst, therefore, the above historical facts point to the early recog-

⁶ "Ordo et methodus generatione dicatarum partium, per anatomem, cognoscendi fabricam. Jenæ, 1664, part i., cap. vii., p. 32.

⁷ Op. cit., "De animal. historia," lib. vii., cap. i.

Choking sensations in the throat and other hysterical manifestations have from time immemorial been regarded as signs of pregnancy. Shakespeare, in "King Lear" (Sc. ii., Act iv.), thus gives expression to this idea:

"O, how this mother swells up towards my heart!
Hysterica passio! down, thou climbing sorrow,
Thy element's below."

⁸ Op. cit., "De animal. generatione," lib. v., cap. 7.

⁹ J. Riolani "Anthropographia," lib. ii., cap. 34, p. 303, Francofurti, 1626. Riolanus quotes from the "Museum" of Albertus Magnus the case of a girl, sent to fetch wine from a public-house, who was seized and ravished on the road, and who found in attempting to sing on her return that her voice had changed from acute to grave.

See also Martial (lib. ix., Epig. 28):

"Jam pædegogo liberatus et cujus
Refibulavit turgidum faber penem."

Also lib. xiv., Epig. 215:

"Dic mihi, simpliciter, comædis et cithædis
Fibula quid præstet? Carius ut futuant."

See also Juvenal, sat. vi., 73.

The gladiators and athletes were also subjected to infibulation:

"Dum ludit media, populo spectante, palæstra,
Delapsa est misero fibula; verpus erat."

Martial, lib. viii., Epig. lxxiii.

¹⁰ Martial, Epig., lib. i., xcv., ad Æglen fellatricem.

¹¹ Epithal. "Pelei et Thetidos," lxxiv. Catulli op. om., Lond., 1882, p. 230. This phenomenon was variously attributed to the dilatation of the vessels of the neck by the semen, a portion of which, according to the Hippocratic doctrine, flowed down from the brain during intercourse, and to the general agitation of the vascular system, and especially the arterial and venous trunks of the throat, during the excitement of the sexual act.

dition of the relationship between over-indulgence of the sexual powers and morbid conditions of the eye, ear, and throat, the special part which it plays in the production of nasal disease seems to have been heretofore overlooked.

My attention was first attracted to the investigation of the physiological and pathological relations between the nose and the genital organs by the case of a patient in London, in 1879, who invariably suffered from coryza after sexual indulgence.

Stimulated by this observation I began the study of the subject, and five years later published the results of my investigations in the American "Journal of the Medical Sciences" for April, 1884, in an essay entitled, "Irritation of the Sexual Apparatus as an Etiological Factor in the Production of Nasal Disease." In this thesis, which was the first attempt to reduce this curious relationship to, as far as possible, a scientific basis, advanced the series of propositions which you will find embodied in the text of these remarks.

Several years later there appeared in France a thesis by Arviset,¹² a critical review by Isch-Wall,¹³ and an excellent article by Joal,¹⁴ which dealt in a most interesting way with the topic under consideration. In Germany, Peyer¹⁵ in Munich, Endriss¹⁶ in Goepingen, and, in the present year, Fleiss¹⁷ in Berlin, have enriched its literature with their contributions. Fleiss's elaborate monograph, written in apparent ignorance of the work done by me in this special field before him, is a model of painstaking labour, and is valuable as an independent contribution to the study of this important subject.

Before submitting for discussion the propositions which form the text for these remarks, let me briefly call attention to certain matters of historical interest which have seemed in olden times to have foreshadowed the physiological relationship between the nose and the genital apparatus.

In the Ayurvêda, the sacred medical classic of the ancient Hindus, work of fabulous antiquity, the causes of common catarrh are thus tersely defined :—

"Uxoris concubitus, capitis dolor, fumus, pulvis, frigus,
Vehemens calor, retentio urinæ sæcumque statim
Catarrhi causæ dictæ sunt."¹⁸

Although indulgence in venery heads the list, it is highly probable that its real influence was unrecognized, and that it is given as an etiological factor simply in accordance with the seemingly prevalent idea that pervades the Indian Shastras, that venery and confinement of the bowels lay at the root of most diseases.

¹² "Contribution à l'étude du tissu érectile des fosses nasales." "Thèse de Lyon," août, 1887.

¹³ "Progrès Médical," Sept. 10 et 17, 1887. "Du tissu érectile des fosses nasales."

¹⁴ "Revue mensuelle de laryngologie, d'otologie, et de rhinologie," févr. et mars, 1888. "De l'épistaxis génitale."

¹⁵ "Ueber nervös. Schnupfen u. Speichelfluss u. den ätiologischen Zusammenhang derselben mit Erkrankungen des Sexualapparates." "Munchener Med. Woch.," Jahrgang 1889, No. 4.

¹⁶ "Ueber die bisherigen Beobachtungen von physiologischen u. pathologischen Beziehungen der Oberen Luftwege zu den Sexualorganen." Inaug. Diss. Wurzburg, 1892.

¹⁷ "Die Beziehungen zwischen Nase u. weiblichen Geschlechtsorganen." Berlin, 1897.

¹⁸ "Susrutas Ayurvêdas: id est Medicinæ Systema, a venerabili Dhanvantare demonstratum a suo discipulo compositum." Translated from the Sanscrit into Latin by Franciscus Hessler, Erlangen, tom. iii., cap. xxiv., p. 44, 1850.

The earlier physiognomists laid great stress upon the size and form of the nose as an indication of corresponding peculiarities in the penis.¹⁹ The nose, for example, that was large and firm was looked upon as an index of a penis acceptable to women, and hence it was that the licentious Emperor Heliogabalus only admitted those who were *nasuti*, i.e., who possessed a certain comeliness of that feature, to the companionship of his lustful practices.²⁰

Johanna, Queen of Naples, a woman of insatiable lust, seems also to have selected, as her male companions, men with large noses, with a similar end in view.²¹ Sterne, in "Tristram Shandy," depicts with consummate humour the supposed sexuality of the nose in "Slawkenbergius's Tale," in which the city of Strasburg was captured by a handsome nose. Everyone remembers the closing lines of that intensely amusing production: "'Alas! alas!' cries Slawkenbergius, making an exclamation—'it is not the first, and I fear will not be the last, fortress that has been either won or lost by noses.'"

While the efforts of those who have selected men who were *nasuti* for sexual purposes were doubtless often crowned with success, history, alas! records some cases of bitter disappointment. Thus Henry Salmuth²² relates with great solemnity the case of a woman who anticipated a large penis from the size of her lover's nose, and, whose hopes being frustrated, is said to have exclaimed, "Oh, nose! how thou hast deceived me!"

Christian Francis Paullini, in his curious work,²³ devotes a chapter, under the caption *Nasuti non semper bene vasati*,²⁴ to the subject. After alluding to the prevalent impression that a large nose indicated a corresponding increase in volume of the virile organ, he goes on gravely to state that he has known several "noble and pious" men in whom the rule did not hold good, and relates the following mournful tale: "Nobilissima ac venustissima Virgo, sed valde petulca, duos simul habebat procos, alterum bonæ vitæ, fortunatæque hominum, sed macilentum; alterum quadratum, et insigni naso conspicuum, hirconem, ac fruges consumerem natum. Illa, temto isto, hunc sibi elegit ob peculium, quod sperabat, magnum et conditionem strenuam. Sed egregie decepta est. Hinc domi jurgia, foris rixæ et summa viri aversio, ob sterilitatem quæ thorum perpetuo comitatur."

It was possibly the supposed influence of an elegant and handsome nose as an incentive to illicit amours that led to the well-known custom of amputation of that organ in adulterers, "*truncas inhonesto vulnere nares*,"²⁵ whilst in women detected in the act²⁶ the disfigurement thereby produced was intended as a perpetual reminder of their shame.

¹⁹ See especially Ludwig Septalius: "De Nævis tractatus," sect. 26, p. 18, in Bonet's "Labarynthi medic. extricati, etc." Geneva, 1687.

²⁰ Vide Ælius Lampridius in "Vitâ Antonii Heliogabalis," in Hist. August. etc. Beponti.

²¹ "Guidonis Pancirolli rerum memorabilium sive deperditarum pars prior, etc." Franco-furti, 1646, lib. 2, tit. 10, p. m. 176.

²² *Ibid.*, p. 177.

²³ "Observat. medico-physiolog." cent. i., obs. xcvi., p. m. 141. Lipsiæ, 1706.

²⁴ Vasatus, post-classical.

²⁵ Virgil, "Æneid," vi., 497.

²⁶ Vide Diodorus Siculus in "Bibliothecæ Historicæ." Paris edition, 1854, tom. i., lib. i., cap. lxxvii. (5), p. 64. On the Customs and Laws of the Egyptians.

In astrology Venus was supposed to govern the nose. According to all the astrologers, the gentry who

"... feel the pulses of the stars,
To find out agues, coughs, catarrhs,"

Venus presides over generation and all the parts pertaining thereto. De la Chambre, in his work "*L'Art de Connoistre les Hommes*,"²⁷ in alluding to this supposed influence, says that nothing is more convincing, at least to those who admit the influence of planets on the affairs of men, than that there is an intimate relationship (astrologically) between the genital organs and the nose. As the result of this sympathy the nose must receive the same influence which the planet Venus communicates to the genital organs, and must submit to the same empire to which they are subjected. The astrological signs of the nose are reproduced in the genital organs, which, like the nose, occupy a prominent part in the centre of the body.

The charlatans of those days pretended to establish the fact of virginity or deforation by astrological signs. William Lilly, the celebrated English astrologer and impostor of the seventeenth century, claimed never to have made a mistake.²⁸ It was doubtless this method of imposture that inspired the line of Butler in *Hudibras*, "detect lost maidenheads by sneezing,"²⁹ in the famous poem in which he smiled the pretensions of this fraternity of quacks away.

The idea of some occult relationship between the nose and the virile member seems, in days gone by, to have crept even into the darkness of teratology. Thus we find Palfyn³⁰ describing cases in which, in place of the nose, were found masses resembling the male organs of generation.

To render the relationship to which I wish to call attention more intelligible, it is necessary to recall the anatomical fact that in man, covering the whole of the inferior, the under surface of the middle, the posterior ends of the middle and superior, and, what is not sufficiently insisted upon by many writers, a portion of the septum, is a structure which is essentially the anatomical analogue of the erectile tissue of the penis. Like it, this body is composed of irregular spaces, or so-called erectile cells, separated by trabeculæ of connective tissue containing elastic and muscular fibres, the latter element being not as prominent and well marked as in the cavernous bodies of the generative organ. Under a multitude of various impressions erection of this tissue takes place, the dilatation of its cells being, in all probability, under the direct dominion of vaso-motor nerves derived through the sphenopalatine ganglion. It is the temporary dilatation of these bodies that constitutes the anatomical explanation of the stoppage of the nostrils in coryza and allied conditions, and their permanent enlargement is the distinctive feature of chronic inflammatory states of the nasal passages. This erectile area is, moreover, especially concerned in the evolution of the many curious "reflex"

²⁷ "*L'Art de Connoistre les Hommes*." Amsterdam, chez Jacques le Jeune, 1660. De la metoposcopie, p. 250.

²⁸ "*Life and Times of William Lilly*," written by himself. London, 1829.

²⁹ Part ii., canto iii., 285. Bartholini ("*Anatomica Reformata de naso*"); also Lond. ed., bk. iii., chap. x., p. 150) tells us that Michael Scotus pretended to be able to diagnose virginity by touching the cartilage of the nose.

³⁰ Fortunus Licetus (Jean Palfyn), "*Description anatomique des parties de la femme, etc., avec un traité des monstres*." Leiden, 1708, lib. ii., chap. 30, pp. 142 and 144.

phenomena which are observed in connection with nasal affections. Indeed, the changes which it undergoes seem to lie at the foundation of nasal pathology, and furnish the key not only to the correct interpretation of nasal disease, but also to many obscure affections in other and remote organs of the body. For practical purposes we may consider this erectile, or contractile, area—consisting, as it does, of myriad blood-vessels and blood spaces in wonderfully exquisite correlation, bounded on the one side by mucous membrane and on the other by periosteum—as an important organ, certainly of respiration and probably of other physiological functions, using the term “organ” in its highest physiological sense. Call these bodies by whatever name we may—erectile bodies, corpora cavernosa, nasal lungs—we have a definite, peculiar anatomical arrangement of tissues endowed with specific physiological function and serving a manifest and manifold destiny in the organism.

PHYSIOLOGICAL.

That an intimate physiological relationship exists between the sexual apparatus and the nose, and especially the intranasal erectile tissue, is sufficiently evident from the following facts:—

I.—(a) In a certain proportion of women whose nasal organs are healthy, engorgement of the nasal cavernous tissue occurs with unvarying regularity during the menstrual epoch, the swelling of the membrane subsiding with the cessation of the catamenial flow.

(b) In some cases of irregular menstruation, in which the individual occasionally omits a menstrual period without external flow, at such times the nasal erectile bodies become swollen and turgid as in the periods when all the external evidences of menstruation are present.

(c) The monthly turgescence of the nasal corpora cavernosa may be bilateral or confined to one side, the swelling appearing at first in one side and then the other, the alternation varying with the epoch.

(d) The periodical erection may be inconsiderable and give rise to little or no inconvenience, or, on the other hand, the swollen bodies may occlude the nostril and awaken phenomena of a so-called reflex nature, such as coughing, sneezing, etc.

(e) In some cases there seems to be a direct relationship between this periodical engorgement of the nasal erectile bodies and the phenomena referable to the head that so often accompany the consummation of the menstrual act.

(f) As a natural consequence of the phenomena above described, the nasal mucous membrane becomes, at such periods, more susceptible to reflex-producing impressions, and is therefore more easily influenced by mechanical, electrical, thermic, and chemical irritation.

(g) The conditions (engorgement and increased irritability of the nasal mucous membrane) indicated above, together with the phenomena that accompany them, are also found during pregnancy at periods corresponding to those of the menstrual flow. There is also reason to believe that similar phenomena occur during lactation and the menopause.

During the period of my original investigations I was unable, from poverty of material, to come to any definite conclusions in regard to the

behaviour of the nasal apparatus during pregnancy. I was familiar with the fact that in some women the presence of pregnancy was proclaimed by a cold in the head. Isolated cases, too, had led me to the belief that the changes such as I described in my first article occurred, in some women at least, during that period at intervals corresponding to those of menstrual flow; but at the time of publication of my essay I was not as sure of the fact as I am now. Since my work first appeared I have been so busied with other things that I have given little or no time to the subject. Several cases have, however, offered themselves to me which have confirmed me in the belief that sometimes, at least, the phenomena described by me as occurring during menstruation also occur in pregnancy at periods corresponding to those of the monthly flux. Not to mention others, I have, for example, at present under my care a young pregnant married woman, without any disease of the nasal passages, who with great regularity during the time at which her menses are due (from the 13th to the 17th of every month) suffers from acute and complete obstruction of both nostrils, intense sensitiveness of the nasal mucosa, and violent paroxysms of sneezing. These phenomena commence on the 13th, reach their acme by the 15th, and gradually subside, to disappear on the 17th of the month. During the intervals between the periods there is no abnormal condition of the nose present. Indeed, it was for this peculiar disagreeable feature of her pregnancy that she consulted me, with a very accurate voluntary description of her symptoms. This condition of affairs has continued during three pregnancies. If other proof were wanting of the fact that menstrual phenomena referable to the nose occur during pregnancy, the question has been definitely settled by Fliess, who has shown that they not only occur during that period, but also during lactation. This author also reports several cases in which abortion was accidentally produced by galvano-caustic operations on the nose. In this connection I would call attention to the fact that Pliny³¹ observes that the smell of a lamp which has been extinguished will often cause abortion, and that the latter ensues should the female happen to sneeze just after the sexual congress.

II.—The presence of vicarious nasal menstruation.

(a) It is a familiar fact that women are occasionally found in whom the menstrual function is heralded or established by a discharge of blood from the nostrils. This hæmorrhage, which may be accompanied by other phenomena referable to the nose, such as sneezing, etc., may be replaced afterwards by the uterine flow, but sometimes continues throughout the menstrual life of the individual. In the latter case, some malformation or derangement of the sexual apparatus seems to be, usually, though not always, responsible for the nasal flow.

(b) Epistaxis also occurs, now and then, from the suppression of the normal flux. This was considered as a favourable sign by Hippocrates,³² and by Celsus,³³ who followed closely in his footsteps.

³¹ "Nat. His.," lib. vii., cap. 7.

³² "Op. omni." Ed. Kuhn. Lipsiæ, 1827, tom. ii., p. 174. "De morbis" lib. i., and Aph. sect. 5, art. 33.

³³ "De medicina." Rotterodami, 1750, lib. ii., cap. 8.

(c) Hæmorrhage from the nose may occur as the vicarious representative of menstruation during pregnancy; towards the close of menstrual life as the premature or normal herald of the menopause; or it may be observed as a recurring phenomenon after the establishment of the change of life or after the removal of the uterus or its appendages.

(d) These vicarious hæmorrhages are, moreover, not confined to women, but make their appearance not infrequently in boys at or near the age of puberty, upon the full development of their sexual powers.

III.—*The well-known sympathy between the erectile portions of the generative tract and other erectile structures of the body.*

There is no reason why the sexual excitement that leads to congestion and erection of these organs, as for example in the case of the nipple, may not, under similar circumstances, cause engorgement of the nasal erectile spaces.

IV.—The occasional dependence of phenomena referable to the nose during sexual excitement (such as, for example, nose bleed, stoppage of the nostrils, sneezing, and other reflex acts), either from the operation of a physiological process, the *erethism* produced by amorous contact with the opposite sex, or during the consummation of the copulative act.

The nasal symptoms most commonly found associated with sexual excitement are sternutation, occlusion of the nasal passages (from erection of the corpora cavernosa), and epistaxis.

Sneezing is sufficiently common, particularly during coitus. Quite a number of such cases have come under my personal observation in persons in robust health and whose nasal organs were apparently free from disease. The reflex may occur before (from erotic thoughts), during, or after the consummation of the act. Many like cases have been since reported to me. Thus one physician of large practice, who became interested in the subject, found twelve cases among his *clientèle*. It may be interesting to know that this form of sexual consensus, or sympathy, has been recognized for centuries. Thus, in the sixteenth century, Amatus Lusitanus³⁴ reports a case of sneezing from the sight of a pretty girl; Bonet³⁵ and Thomas Bartholini,³⁶ and, later, Stalpart Vanderwie,³⁷ relate cases of sneezing during coitus. In the last century Schurig,³⁸ following Bartholini, and at the commencement of the present, Gruner,³⁹ give sneezing as one of the signs of pregnancy. Gruner⁴⁰ states that the nose

³⁴ "Curatium medicinalium," cent. iv., cur. 4. Venet. 1557. See also Rahn, "Exercit. phys. de causis physicis miræ illius tum in homine, tum inter homines, tum denique inter cetera naturæ corpora sympathia," xvii., Turici, 1788.

³⁵ "Sepulchretum." L. i., s. xx.

³⁶ "Historiarum anatomic. et medic. rariorum," cent. v. et vi., ed. Hafnæ, 1761, v., p. 184.

³⁷ "Observations rares de médecine, etc." (quoted by Deschamps, "Traité des maladies des fosses nasales et leur sinus"). Paris, 1804, p. 88.

³⁸ "Gynæcologia historico-medica, etc." Dresden and Leipsic, 1730, p. 429.

³⁹ "Physiologische u. pathologische Zeichenlehre, etc." Jena, 1801, p. 122.

⁴⁰ *Ibid.*, p. 327. Several of the older writers refer to a case of "pituitous and serous catarrh" from coitus, reported by Georg Wolfgang Wedel (see Schurig, "Spermatologia historico-medica, etc.," Francofurti ad Mœnum., 1720, p. 280), but I have been unable to obtain the original account of the case. John Jacob Wepfer, "Observationes medico-practicæ de affectibus capitis internis et externis," Schaphusii, 1728, obs. lvii. (see my essay, "The Pathological Nasal Reflex, an Historical Study," "Transactions of the American Laryngological Association, 1887"; also "N. Y. Medical Journal," August 20th, 1887), mentions a case of hemicrania, tinnitus aurium, and vertigo associated with uterine trouble, sneezing, and a nasal discharge, but few particulars are given.

It is interesting in this connection to recall the admonition of Celsus to abstain from warmth

becomes warm and red in the hysterical, in women at the menstrual period, and in the victims of onanism.

Isolated cases of sneezing at the menstrual period are found scattered here and there in older medical literature. Thus Garmanus⁴¹ and Lanzonus⁴² report cases of this kind, Defius⁴³ a case of sneezing following the suppression of the menses, while Petzold⁴⁴ relates one in which sneezing occurred every day during the whole of pregnancy. Paullini⁴⁵ records a case in which the menses were brought on by sternutatories, and quotes Fabricius Hildanus as having noted copious menstruation follow violent and immoderate sneezing.

Sudden and complete occlusion of both nostrils sometimes occurs with regularity during coitus. This phenomenon, which may be accompanied by so-called "reflex" phenomena, such as, for example, asthmatic attacks, is doubtless due to sudden dilatation of the erectile bodies from paralysis of their vaso-motor nerves; for, as Anjel⁴⁶ has shown, during coitus the nervous shock is distributed to the whole vaso-motor system of nerves, and is not confined to the erection centre.

Cases have also been reported in which the act of coitus was accompanied by hæmorrhage from the nose (Isch-Wall, Joal).

V.—The reciprocal relationship between the genital organs and the nasal apparatus is furthermore illustrated by the occasional dependence of genito-urinary irritation upon affections of the nasal passages. Retarded sexual development, too, may possibly depend upon the co-existence of nasal defect.⁴⁷ Unfortunately there are no authentic cases in literature in support of this latter hypothesis, but in this connection I would like to call attention to the remarkable case reported by Heschel ("Wiener Zeitschrift für pract. Heilkunde," March 22nd, 1861), in which imperfectly developed genital organs were associated with absence of both olfactory lobes. The man was well developed, with the exception of the testes, which were the size of beans and contained no seminal canals, and the larynx, which was of feminine dimensions. All trace of olfactory nerves was absent, as were also the trigona olfactoria and the furrow on the under surface of the anterior lobes. There was scant perforation of the cribriform plate which transmitted the nerveless processes of the dura mater. There was also an absence of nerves in the nasal mucosa.

VI.—It is, finally, quite possible that irritation and congestion of the nasal mucous membrane precede, or are the excitant, of, the olfactory impression that forms the connecting link between the sense of smell

and women at the commencement of an ordinary catarrh. (Op. cit., lib. iv., cap. 2, sect. 4, "ubi aliquid ejusmodi sentimus, protinus abstinere a sole, a balneo, a venere debemus.") Hippocrates, on the other hand, relates the following case: "Timochari hieme distillatione in nares præcipue vexato, post veneris usum cuncta ressecata sunt, lassitudo, calor et capitis gravitas successit, sudor ex capite multus manabat." Op. cit., "De morbis vulgaribus," lib. v. (tom. iii., p. 574). The expression "bride's cold" would seem to indicate on the part of the laity the suspicion of a causal connection between repeated sexual excitement and coryza.

⁴¹ "Ephemerid. nat. cur.," Dec. ii., An. viii., obs. 152.

⁴² *Ibid.*, Dec. iii., An. ii., obs. 32.

⁴³ "Act. nat. cur.," vol. viii., obs. 108.

⁴⁴ "Ephemerid. nat. cur.," Dec. iii., An. v., vi., obs. 183. See also Rahn, op. cit., p. 34.

⁴⁵ Op. cit., cent. iv., cap. xlviii.

⁴⁶ "Archiv für Psych.," Bd. viii., Heft 2.

⁴⁷ See Elsberg, "Archives of Laryngology," Oct., 1883.

and erethism of the reproductive organs exhibited in the lower animals, and in those individuals whose amorous propensities are aroused by certain odours that emanate from the person of the opposite sex.

Through all the centuries the season of flowers—the springtime—has been celebrated in amatory song and story, 'tis the season of love and of sexual delight. This conceit, handed down to us from the poets of antiquity, finds modern expression in the glorious verse of Tennyson :

“ In the Spring a fuller crimson comes upon the robin's breast ;
In the Spring the wanton lapwing gets himself arrayed in trust ;
In the Spring a livelier iris changes on the burnish'd dove ;
In the Spring a young man's fancy lightly turns to thoughts of love.”

Women, in all the ages, from the perfumed courtesan of ancient Babylon to her reflected image in the harem of the Sultan to-day, has appealed to the olfactory sense to bring man under her sexual dominion and to fire his passionate desire.

In the Songs of Solomon, in the *artes amoris* of the older writers, in the fetich worship of odour, in the picture of Richelieu surrounded by an atmosphere of dense perfume in order to stimulate his amorous feeling, is reflected the idea of the possible power of olfactory perception in awakening sexual thoughts. If you doubt that modern man has not forsaken this idea, read Zola,⁴⁸ Lombroso, Tolstoi, Nordau.

Rousseau has aptly termed olfaction the sense of the imagination, and if we reflect how intimately related it is to the impressions we form of external objects, how it affects our emotions and influences our judgment, the clever definition of the French philosopher becomes all the more striking and felicitous.⁴⁹

While it is undoubtedly true that olfactory impression in man, under natural conditions, plays a subordinate part in the excitation of sexual feeling, while it may be also true that such intensification or perversion of the odour sense may indicate an abnormal condition and a reversion to the purely animal type, still the fact is incontestable that many persons are attracted sexually to each other through the sense of smell. Both history and fiction are full of such examples.

In connection with this part of the subject it is interesting to note the extraordinary degree of nervous sympathy that may be developed through the sense of smell. Millingen,⁵⁰ for example, relates the case of a pensioner in the Hospital for the Blind in Paris, called *Les quinze Vingt*, who by the touch of a woman's hands and nails, and their *odour*, could infallibly

⁴⁸ See especially a work by Leopold Bernard, “*Les odeurs dans les romans de Zola.*” Montpellier, 1889.

⁴⁹ Of great interest is the influence which civilization exerts upon the development and impressibility of the olfactory sense. Without enumerating, much less elaborating, the myriad conditions that conspire to produce such a result, we may safely lay down the general proposition that the physical and moral forces of civilization—the social and intellectual environment of the subject—exert a marked effect upon the olfactory faculty by inviting or encouraging disturbance of the sentient and perceptive apparatus ; that the higher we ascend in the social scale, the more readily our judgments are unnaturally influenced or perverted by impressions derived through the sense of smell ; and that the more we recede from the inferior orders, the less perfect and acute this faculty becomes, the more susceptible to irritation, and the more predisposed to disease. In view, therefore, of the importance of olfaction as an avenue through which our mental impressibility is influenced—our imagination perverted—and in view of the relations of civilization to the sense of smell, we can readily understand why it is that this faculty is found more frequently deranged among the superior orders than in those lower down in the social scale and in the savage state.

⁵⁰ Millingen. “*The Passions, or Mind and Matter, etc.*” London, 1843, p. 102.

assert if she were a virgin. A number of tricks were played on him and wedding rings were put on the fingers of young girls, but he never was at fault.

As in the lower animals it is possible, or even probable, that the alternate inflation and collapse of the erectile bodies is, to some extent at least, the means by which the grateful or ungrateful odorous particles are excluded from, or admitted to contact with, the apparatus of special sense, so in men in whom this sense is sexually excited or perverted either normally, or from defect in the subjects themselves, the reception or rejection of the seductive odours may be accomplished by a similar mechanism.

These facts point conclusively to an intimate physiological association between the nasal and reproductive apparatus, which may be partially explicable on the theory of reflex or correlated action, partially by the bond of sympathy which exists between the various erectile structures of the body. That a relationship exists by virtue of which irritation of the one reacts upon the circulation and possibly nutrition of the other, is accordingly rendered highly probable by the evidence of clinical observation.

If this excitation be carried beyond its physiological limits there comes a time, sooner or later, when that which is a normal process becomes translated into a pathological state, according to a well-known law of the economy. Hence it is *a priori* conceivable and eminently probable, not only that stimulation of the generative organs, when carried to excess, may become an etiological factor in the production of congestion and transient inflammation of the nasal passages, and especially of their cavernous tissue, but that repeated and prolonged abuse of the function of these organs may, by constant irritative influence on the turbinated tissue, become the starting point of chronic changes in that structure.

PATHOLOGICAL.

The following data, derived from personal clinical observation, may possibly throw some light upon the subject.

I.—In a fair proportion of women suffering from nasal affections, the disease is greatly aggravated during the menstrual epoch, or when under the influence of sexual excitement.

II.—Cases are also met with in which congestion or inflammatory conditions of the nasal passages make their appearance only at the menstrual period, or, at least, are only sufficiently annoying at that time to call for medical attention.

III.—Occasionally, the discharge from a nasal catarrh will become offensive at the menstrual epoch, losing its disagreeable odour during the decline of the ovarian disturbance. In many cases of ozæna, the factor is much more pronounced at times corresponding to those of the menstrual flow.

IV.—Excessive indulgence in venery sometimes seems to have a tendency to initiate inflammation of the nasal mucous membrane, or to aggravate existing disease of that structure. There are those, for example, who suffer from coryza after a night's indulgence in venereal excesses,

and the common catarrhal affections of the nose are undoubtedly exaggerated by repeated and unnatural coition.

V.—The same is true in regard to the habit of masturbation. The victims of this vice in its later stages are constantly subject to nose-bleed, watery or mucous discharge from the nostrils, and perversion of the olfactory sense.

VI.—The co-existence of uterine or ovarian disease exerts sometimes an important influence on the clinical history of nasal disease. This fact has been shown in practice in cases in which the nasal affection has resisted stubbornly all treatment, and in which it has only been relieved upon the recognition and appropriate treatment of disease of the generative apparatus.

The recent researches of Fliess seem to indicate that the converse of this proposition is true.

The most commonly found conditions of the nasal apparatus following perverted sexual excitement, either from excessive venery or onanism, are: (1) coryza (generally of vaso-motor type), with or without reflex manifestations, such as asthma, paroxysmal sneezing, etc.; (2) epistaxis; and (3) various forms of perversion of the sense of smell. In addition to these, Peyer has observed abnormal dryness of the nasal and pharyngeal mucous membrane, indicated by a feeling of dryness and burning in these regions, and by complete cessation of secretion.

The coryza that follows intemperate venery resembles in character that seen in the disease falsely called "hay fever," and, like it, is generally associated with more or less pronounced neurasthenia, or, shall we say, localized hysteria. In other cases the nervous system is not apparently involved. The predominant temperament, however, in individuals thus affected is the neurotic. While they may not necessarily in some instances belong to the so-called "nervous" or "hysterical" individual, while they may give no outward and visible sign of a deranged nervous system, there will generally be found, on careful examination, a delicacy or sensitiveness of the nervous apparatus either in whole or in part.

It is conceivable that this sexual coryza may be associated with almost any of the so-called nasal reflex neuroses. In one of my cases asthma was the central symptom. A young married woman, twenty-three years old, in otherwise apparently perfect health, consulted me for the relief of attacks of asthmatic breathing associated with stoppage of the nostrils. I could find nothing wrong at the time of consultation with the respiratory apparatus, and her other organs were in perfect condition. Reluctantly she confessed that every night for five years she and her husband had indulged in intemperate venery. Moderation in their sexual relations caused rapid disappearance of the symptoms, and in the nine years that have elapsed since she consulted me there has been no return of the disorder.

Interesting cases of asthma of nasal origin associated with and due to sexual excitement have also been reported by Joal and Peyer. In this connection I would recall a case of periodic vaso-motor coryza, reported by me at length elsewhere,⁵¹ in which the attacks invariably

⁵¹ "A Contribution to the Study of Coryza Vaso-motoria Periodica, or so-called 'Hay Fever.'" "N. Y. Med. Rec.," July 19, 1884.

appeared and were most severe at the menstrual period, appearing sometimes at its commencement, sometimes at its close. In the attacks coming on in the interval between the monthly periods pain was always felt in the left ovary. Residence at the seashore invariably gave relief, except during menstruation, when the attacks were as bad as when at home. The outbreak of the disease at the menstrual epoch in this case is readily explained by the physiological erection of the corpora cavernosa which occurs at that period. In this particular case the chief, and under certain circumstances the sole, excitant of the paroxysm was the uterovarian excitement of the menstrual epoch.

Nose-bleed is not infrequently the result of onanism. Years ago Du Saulsay⁵² called attention to the fact that enormous quantities of blood can be lost from the nose from the practice of this vice, and the accuracy of his observation is borne out by the experience of subsequent observers. Among others, Joal⁵³ has collected several such cases and reports three of his own. One of his patients informed him that he masturbated to excess to provoke nose-bleed, which relieved him from violent headaches from which he suffered.

Whether the hæmorrhages in these cases—which, by the way, are not confined to the male sex⁵⁴—come from simple acute distension of the intranasal blood-vessels, or whether definite chronic structural changes have taken place in the mucous membrane and in vessel walls, are points which are as yet undetermined. The probability is that some intranasal lesion is responsible for them, for, as I have pointed out elsewhere,⁵⁵ the discharge from the nostrils and the perverted olfactory sense found in the later stages of onanism are often simply the outward expression of chronic nasal inflammation.

The nature of the perversion of the olfactory sense in onanists will vary with the character of the nervous condition produced by the vice—hyperosmia, hyposmia, parosmia, and allotriosmia have all been observed in cases of immoderate sexual excitement.

The investigations of Fliess would seem to indicate that painful, profuse, and irregular menstruation may in some instances depend upon an intranasal cause. He cites a number of cases to show that the pain of certain forms of dysmenorrhœa may be temporarily dissipated by the application of cocaine to the nasal mucous membrane, or permanently controlled by cauterization. According to him, only the inferior turbinated body and the tuberculum septi possess a special relation to the dysmenorrhœic pains. These two localities he accordingly designates as *κατ' ἐξοχην*, genital zones (*Genitalstellen*). If the tuberculum septi be cocaineized, the sacral, if the inferior turbinated bodies be cocaineized, the hypogastric, pains disappear. Cocainization of the right nostril causes disappearance of the pain on the left side of the body and *vice versa*.

⁵² "Comment. de rebus in med. etc.," vol. xviii., p. 213. Michell, in Schlegel's "Syllōgia selectiorum opusc. de mirabile sympathiæ quæ partes inter diversas corporis humani intercedit." Lipsiæ, 1787.

⁵³ Loc. cit.

⁵⁴ See case of Lemarchand de Trigon (girl of 16), quoted by Joal.

⁵⁵ Loc. cit.

In answer to the objection that these phenomena may be due to the general anæsthetic action of the drug, he points out the fact that cocaine absorbed into the blood does not produce a general analgesic effect, as is produced in the case, for example, of morphia. On the contrary, in small doses it acts as a stimulant. The fact that the pain ceases *only* when the genital zones are cocainized, and that it may be permanently dissipated by cauterization of this area, does away, he thinks, with the assumption that the subsidence of the pains is a part of the euphoria produced by the drug. The fact alluded to above, that in cocainization of certain parts of the genital zones only individual pains disappear from the symptom-complex, militates against the supposition of a simple, general narcotic effect.

I cannot vouch for or deny the accuracy of the above statements, as Fliess's monograph has just come into my possession and I have had neither time nor opportunity to put them to the test. Curiously enough, the genital zones of Fliess correspond exactly with the most sensitive portions of the sensitive reflex area mapped out by me in 1883.⁵⁶

⁵⁶ "On Nasal Cough and the Existence of a Sensitive Reflex Area in the Nose." "American Journal of the Medical Sciences," July, 1883. The results of these experiments were first brought before the Baltimore Medical Association in the early part of 1883, and subsequently before the Medico-Chirurgical Faculty of Maryland (April, 1883, *vide* Transactions), and the American Laryngological Association (May, 1883, *vide* Transactions). The conclusions reached from these investigations were as follows:—

"(1) That in the nose there exists a definite, well-defined, sensitive area, whose stimulation, either through a local pathological process, or through the action of an irritant introduced from without, is capable of producing an excitation which finds its expression in a reflex act, or in a series of reflected phenomena.

"(2) That this sensitive area corresponds in all probability with that portion of the nasal mucous membrane which covers the turbinated corpora cavernosa.

"(3) That reflex cough is produced only by stimulation of this area, and is only exceptionally evoked when the irritant is applied to other portions of the nasal mucous membrane.

"(4) That all the parts of this area are not equally capable of generating the reflex act, the most sensitive spot being probably represented by that portion of the membrane which clothes the posterior extremity of the inferior turbinated body and that of the septum immediately opposite.

"(5) That the tendency to reflex action varies in different individuals, and is probably dependent upon the varying degree of excitability of the erectile tissue. In some the slightest touch is sufficient to excite it; in others, chronic hyperæmia or hypertrophy of the cavernous bodies seems to evoke it by constant irritation of the reflex centres, as occurs in similar conditions of other erectile organs, as for example the clitoris.

"(6) That this exaggerated or disordered functional activity of the area may possibly throw some light on the physiological destiny of the erectile bodies. Among other properties which they possess, may they not act as sentinels to guard the lower air passages and pharynx against the entrance of foreign bodies, noxious exhalations, and other injurious agents to which they might otherwise be exposed?

"Apart from their physiological interest, the practical importance of the above facts from a diagnostic and therapeutic point of view is sufficiently obvious. Therein lies the explanation of many obscure cases of cough which heretofore have received no satisfactory solution, and their recognition is the key to their successful treatment."

In calling attention to this area as containing the spots most sensitive to reflex-producing impressions, I did not, nor do I now (as has been wrongly inferred), desire to maintain that pathological reflexes may not originate from other portions of the nasal mucous membrane. Indeed, wherever there is a terminal nervous filament it *may* be possible to provoke sneezing, lachrymation, and other reflex movements. My contention is simply this, that the area indicated in my original paper represents by far the most sensitive portion of the nasal cavities, and that pathological reflex phenomena are in the large majority of cases related to diseased conditions of some portion of this sensitive area. That all pathological nasal reflexes arise from irritation of this particular area is a proposition which I do not and never have maintained. The determination of these sensitive areas is of special importance and interest in the solution of the pathology of the so-called nasal reflex neuroses. Whether a special sensitiveness in certain portions of the nasal mucous membrane exists or not, the agitation of the question has led to more rational methods of procedure in the treatment of a large class of nasal affections, and to more conservative methods in intranasal surgery. Before the location of the sensitive area or areas, the nasal tissues were destroyed with an almost ruthless recklessness that bade fair to bring intranasal surgery into the worst repute. (For an elaborate discussion of this whole subject see article by the author in "Wood's Reference Handbook of the Medical Sciences," edited by Buck. Wm. Wood & Co., N. Y., 1887, vol. v., pp. 222-242.)

I have on innumerable occasions⁵⁷ shown that phenomena widely different in character and anatomical sphere of operation may be produced at will by artificial stimulation of this area, and that they may be stimulated by local applications to, or removal of, the membrane covering the diseased surface. It is therefore not difficult to conceive that the phenomena referable to the uterus and ovaries during menstruation may be influenced in a similar manner. The specific relation of the two zones and the crossed action of the reflex, if such it be, are much more difficult of explanation. If such a condition of affairs exists, it is certainly a remarkable phenomenon.

These observations, therefore, encourage the belief, if they do not establish the fact, that the natural stimulation of the reproductive apparatus, as in coitus, menstruation, etc., when carried beyond its normal physiological limits, or pathological states of the sexual apparatus, as in certain diseased conditions, or as the result of their over stimulation from venereal excess, masturbation, etc., are often the predisposing and occasionally the exciting causes of nasal congestion and inflammation and perversion of the sense of olfaction. Whether this occur through reflex action, pure and simple, or as the sequel of an excitation in which several or all of the erectile structures of the body participate, the starting point of the nasal disease is, in all probability, the repeated stimulation and congestion of the turbinated erectile tissue of the nose. It is highly probable that this erectile area, or organ, so sensitive to reflex-producing impressions, is the correlative of certain vascular areas in the reproductive tract, and that the phenomena observed may therefore be explained by the doctrine of what we may call, for want of a better name, reflex correlated action.

In these remarks I have attempted no thoroughgoing exposition of the subject, but simply laid before you the results of my personal labours. These no longer represent, I am glad to say, the result of solitary observation and isolated experience. I have not attempted, as Fliess has done, to touch upon the biological side of the question.

The study of the relations between the nose and the sexual apparatus opens up a new field of research, of pleasing landscape and almost boundless horizon, which bids to its exploration not only the physiologist and pathologist, but also the biologist. Above all it brings us face to face with a serious problem of life, an interesting enigma, whose significance it will be the task of the future to divine.

⁵⁷ My views upon this subject may be found in the following publications:—A Contribution to the Study of Coryza Vaso-motoria Periodica, or so-called "Hay Fever," "N. Y. Med. Record," July 19, 1884. Coryza Vaso-motoria Periodica in the Negro, with Remarks on the Etiology of the Disease, "N. Y. Med. Record," Oct. 18, 1884. "Rhinitis Sympathetica," essay read before Clin. Soc. of Md.; see brief abstract in "Md. Med. Journal," April 11th, 1885, and in "Internationales Centralblatt f. Laryngologie, etc.," Sept., 1885. Observations on the Origin and Cure of Coryza Vaso-motoria Periodica. "Trans. Medico-Chir. Faculty of Maryland," 1885. Review of Morell Mackenzie's Essay on Hay Fever, etc., "The American Journal of the Med. Sciences," Oct., 1885, pp. 511-529. See also Discussion of the subject before the American Laryngological Association (May 14th, 1884, *vide* Transactions, p. 113 *et seq.*). See also Cases of Reflex Cough due to Nasal Polypi, "Trans. of the Medico-Chirurgical Faculty of Md.," 1884, and articles in Wood's Handbook already referred to.

NASAL BACTERIA IN HEALTH.

By WILLIAM HALLOCK PARK, M.D., and JONATHAN WRIGHT, M.D.

THERE has been of late great differences of opinion among investigators as to the presence and abundance of bacteria upon the normal mucous membrane of the nose. Prof. B. Fraenkel, in 1876, in Von Ziemsen's "Encyclopædia," in his article on acute coryza, wrote: "A large number of these little structures, recently so much spoken of and called micrococci, may generally be seen also covering the cells." He refers to Hueter (1) as maintaining these bodies to be the source of irritation in coryza. Herzog (2), in 1881, found many bacilli and cocci in normal and abnormal nasal secretions. Eugen Fraenkel (3), on the other hand, in 1882, stated that he could find no bacteria in the normal nose. B. Fraenkel (4), in 1886, found in the normal pharynx the staphylococcus pyogenes and another micrococcus, the latter being the same, apparently, as found by Hack and Strauch (5) in the retropharynx. Löwenberg (6) and Hajek (7) failed to find micro-organisms at all constant or abundant in normal nasal secretions. Löwenberg (quoted by Thomson and Hewlett) has lately reiterated his observations in regard to the infrequency of bacteria in the nasal mucus. Reimann (8), in 1887, described two forms as nearly always found.

Having become interested in the subject, one of us in 1888 (Dr. Wright) examined the secretions of ten healthy noses, and found a number of various forms which were differentiated by the bacterial culture methods then in use. The following is the table of a summary taken from a paper published at that time ("New York Med. Journ.," July 27th, 1889).

	Staph. pyog. aur. alb. and citr.	Micr. flav. desid.	Bac. lac. aër.	Penc. glauc.	Micr. cer. flav.	Micr. tetra genus.	Different un- described forms.
Case I. ...	...	...	...	...	...	...	I
" II. ...	1	...	...	...	...	...	...
" III. ...	1	...	I	...	...	...	...
" IV. ...	1	...	...	...	...	...	...
" V. ...	1	...	...	...	...	...	...
" VI. ...	...	...	...	I	...	...	...
" VII. ...	1	I	...	...	...	...	...
" VIII. ...	...	I	...	...	...	...	...
" IX. ...	...	...	...	...	I	...	I
" X. ...	1	I	...	...	...	I	I
Total.....	6	3	I	I	I	I	3

No attempt was made at the time to estimate the number found in each case. That, of course, will always depend largely upon the amount of secretion obtained for each culture, and there was no accurate method of estimating that. The cultures were all taken from well beyond the vestibule of the nose. It is impossible for us to state positively that all chance of contamination was avoided while the platinum loop was passing through the vestibule, but the work was performed by one of us who

was thoroughly familiar with both the bacteriological and rhinological technique in use at that time. It will be seen that the staphylococcus pyogenes was the bacterium most frequently found. These results conformed closely with those arrived at by Von Besser (9) about the same time.

Besides many non-pathogenic forms he found the diplococcus pneumoniae, the streptococcus, and staphylococcus pyogenes. From the large numbers of the different varieties, he concluded that they must have multiplied in the nose. His investigations were made by means of cover glass preparations and of culture plates of agar-agar. The cultures were obtained from the nose at a depth of 3-4 centimètres.

He examined normal noses in 30 laboratory workers,

27 cases convalescent from various diseases (not nasal),

23 soldiers, servants, etc.,

making altogether a total of 80 cases.

Plate cultures in 1 case showed 8 colonies.

„ 5 cases showed less than 20 colonies.

„ 5 „ between 20 and 30 colonies.

„ 7 „ „ 30 and 100 „

In all the other cases cultures showed from 100 to countless colonies. By double staining with fuchsin and methyl blue, Thost (11) found Friedlander's pneumococcus in his own and in other normal noses.

Schubert (12), in 1889, reported a case in whose nasal chambers there was abundant growth of a mycelium.

Deletti (13), in 1891, examined three cases with normal nasal passages, and found by culture methods micrococci, tetracocci, staphylococci, and streptococci, besides aërial and other undetermined forms.

Weibel (14), in 1887, said: "On microscopic examination of the nasal mucus I frequently noticed the occurrence of crooked bacteria" in the back part of the nose.

Paulsen (15), in the Physiological Congress at Kiel in 1890, asserted that he also, simultaneously with Von Besser, had found numerous bacteria in the healthy nose, beyond the vestibule apparently, but of different non-pathogenic varieties. He also examined the nasal secretions in coryza, but did not find any micro-organisms which could be regarded as etiological.

Strauss (16) has lately declared that he has proved that the tubercle bacillus is at least the occasional inhabitant of the nasal fossæ. It will be seen by the references above quoted how contradictory the testimony is in regard to the presence of bacteria in the healthy nose. It is a common observation of the laryngologist and rhinologist that nasal and pharyngeal operation wounds, when they do not extend deeply into the tissues underlying the mucosa, rarely present any evidences of local sepsis, and symptoms of systemic infection are extremely rare.

Würtz and Lermoyez (17), in 1893, performed a series of experiments, which, if accepted as free from error, lead to the conclusion that the nasal mucus in normal noses possesses a bactericidal power, which would account for the usual non-septic course of operation wounds in the nose ;

but both before and since these experiments Lermoyez (18) has stated that occasionally bacteria—sometimes pathogenic—are found in the nose, and that precautions must be taken to prevent the occurrence of sepsis, both before and after nasal operations.

These authors obtained mucus from the nose by placing in it little tampons of sterilized absorbent cotton, and allowing them to remain there until they became saturated with the nasal secretions. This colourless fluid was then squeezed into test tubes, with aseptic precautions, and used for the experiments. We quote a passage from their paper, which, translated, reads as follows: "We have used the mucus thus obtained, sometimes in its natural state, sometimes after having been sterilized by the procedure of Tyndal. Tyndallization in no way changes its character; at the most it only renders it a little more fluid and slightly more alkaline. The results obtained by us with the natural mucus and with the Tyndallized mucus were almost exactly the same. In fact, if one takes care to reject the first drops which, in flowing, cleanse the nose, the nasal mucus which one obtains by the excitation of the healthy pituitary membrane *does not generally contain any microbes*. We have many times verified this fact, which is in flagrant contrast with the idea which ordinarily obtains of the richness of the flora of the nasal chambers."

They tested the bactericidal power of the nasal mucus upon anthrax bacilli, and sum up the results thus: "It follows, therefore, from these experiments that the human nasal mucus possesses, as concerns the bacillus anthracis, considerable bactericidal power." This conclusion they arrived at by inoculating tubes containing the nasal mucus with virulent bouillon cultures of anthrax, and placing them in the thermostat for periods varying from two hours and forty-five minutes to three weeks. Gelatine plates made from these tubes showed no colonies of anthrax. Guinea-pigs inoculated from them remained healthy. All these experiments were controlled in the way usual to bacteriological technique.

They further say: "In a series of analogous experiences, we have studied the bactericidal power of the nasal mucus upon other microbes—staphylococcus aureus, streptococcus pyogenes, coli bacillus, etc. We intend to return to these another time. At present we may say that the action of the nasal mucus is exerted very unequally upon different pathogenic organisms; it does not seem to have, upon several of them, a bactericidal power as energetic as upon the anthrax bacillus. Nevertheless, upon all, or nearly all, its action is of a similar kind; the intensity of its effects only varies."

Thomson and Hewlett (19), in a carefully prepared paper, record the results of their examinations of the secretions in normal noses—seventy-six cultures in all—from beyond the vestibule; of these, sixty-four remained sterile. Twenty-seven cultures were made from the vestibule; and of these not one remained sterile. They say:—

"We submit, as a summary of our experiments—

"1. That in all bacterioscopic examinations of the nasal fossæ—in all researches as to the action of the nasal mucus, etc.—a clear distinction is to be made between the vestibule of the nose and the proper mucous

cavity. The former is lined with skin, and is furnished with hairs and with sudiferous and sebaceous glands; it is not part of the nose cavity proper, but only leads to it.

"2. The neglect of this distinction may account for the discrepancies in previous observations on the subject. Contamination with the lining of the vestibule is difficult to avoid, even when this source of error has been realized.

"3. In the dust and crusts of mucus and *débris* deposited among the vibrissæ of healthy subjects micro-organisms are never absent. They are rarely scanty in number; as a rule they are abundant.

"4. On the Schneiderian membrane the reverse is the case. We do not assert that micro-organisms are completely absent; obviously some must occasionally occur, but under normal conditions they are never plentiful. They are rarely even numerous, and in more than eighty per cent. of our observations we have failed to find any, and the mucus was completely sterile. These observations were limited to the anterior part of the nose, and, as not more than a fourth of the cavity is accessible to inspection and examination, it is reasonable to conclude that germs would be found still more infrequently in the deeper portions of the fossæ.

"5. The occurrence of pathogenic organisms must be so infrequent that their presence in the pituitary membrane can only be regarded as quite exceptional."

Subsequent observers who have written on the subject are Fermi and Brettschneider (20), who found a large number of micro-organisms in the nose, by far the most numerous of which was the *sarcina alba*. Pathogenic forms were occasionally found, their number greatly increasing during a coryza. Piaget (21), on the other hand, a student of Lermoyez, has lately confirmed the observations of Thomson and Hewlett, as well as those of Würtz and Lermoyez.

Since the completion of much of our work we note in the report of a meeting of the South German laryngologists at Heidelberg, taken from the "*Münchener Med. Wochenschrift*," that Klemperer (22) directly criticises the results both of Thomson and Hewlett, and of Würtz and Lermoyez, and states that the interior of the nose always contains some germs. We have not had an opportunity of examining Klemperer's paper in the original. Apparently, he adopted some of the precautions of technique which we have employed. He also failed to confirm the statements of Würtz and Lermoyez in regard to the bactericidal power of the nasal mucus.

The work of Malato ("*Archivio Italiano di Otologia*," fasc. 4, Vol. VI., 1897) comes to hand too late for careful perusal, but he appears also to have found various bacterial forms in the cases he examined. Among them several pathogenic varieties are to be noted.

The criticism of Thomson and Hewlett seemed to point to a possible source of error in the work of Dr. Wright. It is a matter of the greatest difficulty in extracting mucus from the interior of the nose to be sure that a hair in the vestibule has not contaminated it. Recognizing this, and admitting the possibility of this source of error in the former investigations, we determined to go over the ground again. Dr. Wright selected

a number of normal noses, carefully trimmed away the vibrissæ in the vestibule with sterile scissors, then wiped out carefully the vestibule and the external integument with a one in two thousand solution of mercuric chloride, and made cultures from the nasal mucosa as far back in the nasal chambers as possible, along the inferior and middle turbinated bodies and the septum. At first this was done with a platinum loop, but this was soon discarded for a slender steel rod wrapped at the end with absorbent cotton, and sterilized, a number at a time, in a glass tube stoppered with cotton wool. Just before using, the cotton at the end of the rod was passed rapidly through a flame, so as to burn off all little projecting fibres, and singe the surface of the cotton slightly. The greatest care was taken that on withdrawal from the nose the mucus-soaked cotton did not come in contact with the vestibule, or with a solid-bladed speculum, sterilized with carbolic acid one in twenty. Any suspicion of failure in this regard caused a rejection of the rod, and a fresh one was used for a second trial. These swabs were then used to inoculate gelatine and serum tubes, and agar and serum plates. These were turned over to Dr. Park for bacteriological examination. In some instances Dr. Park assisted at the clinical work; in some instances he did it alone; in others, Dr. Wright did it alone. Every effort was made to avoid all possible sources of error.

RESULTS OF THE EXPERIMENTAL WORK.

The secretion from the normal or nearly normal nasal mucosa of thirty-six individuals was subjected to bacteriological examination. The amount of mucus was, as a rule, very small, and was usually taken from the lower middle portion of the middle turbinated bones.

The cultures were made upon agar, and sometimes also upon gelatine, blood serum and blood-serum agar.

The following are the results of the examinations in the thirty-six specimens;—

No bacteria developed in the cultures in ...	...	6 cases.
Less than 50 colonies developed in...	...	8 "
More than 50 and less than 100 in ...	...	8 "
" " 100 colonies developed in ...	...	14 "
		<hr/> 36 "
Apparently sterile cases ...	...	6
Not " " ...	...	30

Of these six sterile cases, in five the mucus was removed with a small platinum wire loop, and the amount of mucus was so small as to form a partial explanation of the negative results.

Two rabbits were killed. The calvarium and the brain were rapidly removed, and access was gained through the floor of the skull with antiseptic precautions to the nasal cavities. The mucus thus obtained in both cases was found by cultures to contain abundant bacteria.

As was to be expected, the number and variety of bacteria appearing in the cultures varied according to the media upon which they were

planted. As a rule the serum or serum-agar cultures showed the greatest number of colonies.

No attempts to identify the various forms of cocci and bacilli obtained from the mucus were made except to search for streptococci. These were not found in any case. This was in marked contrast to the results obtained from bacterial cultures of the nasal mucus from a number of children living in an asylum. In sixty per cent. of these streptococci were found. The nasal mucous membrane in none of these was quite normal.

Bearing somewhat upon the bactericidal effect of the nasal mucus is the frequent long persistence of diphtheria and pseudo-diphtheria bacilli in the nostrils of those convalescent from mild forms of nasal diphtheria. Three of the specimens tabulated above (medical students in attendance on diphtheria patients) contained these bacilli. An experiment which had for its object to test the bactericidal effect of the nasal mucus of a rabbit upon a variety of bacteria accustomed to grow in a rabbit's blood serum led to interesting results. It was as follows :—

A tiny drop of a serum-bouillon culture of a streptococcus, which had been rendered extremely virulent for rabbits by its passage through a large number of them, was dropped into the nostrils of two rabbits. One died on the second day, and one on the third day, of general septicæmia. In these cases the streptococci either penetrated the nasal mucus membrane, or remained alive and passed back into the pharynx and there produced disease. In neither case, would it seem, was the mucus sufficiently bactericidal to destroy the bacteria.

If, as our experiments hitherto detailed tend to show, there is more or less constantly to be found within the nasal cavities a growth of bacteria, the contention that any marked bactericidal action is inherent in the nasal mucus falls to the ground. Nevertheless, a few experiments were made directly as to this point.

The nasal mucus from one case, after being sterilized at 50° C. for an hour on two successive days, proved to be without apparent bactericidal effect upon diphtheria bacilli, pseudo-diphtheria bacilli, staphylococci, streptococci, and a coccus obtained from the normal mucus.

From two cases the nasal mucus obtained on sterile cotton (absorbent) by allowing it to remain for a time in the nasal chambers and then squeezing it out, proved to have no bactericidal power within twenty-four hours upon the same organisms ; but the effect of both the sterilized and the unsterilized mucus on anthrax bacilli was quite marked. Sterile sheep serum was found to have the same power.

While, therefore, our investigations do not bear out the statements either of Thomson and Hewlett or of Würtz and Lermoyez, it is doubtless true that the mucus from the healthy nose is not as full of germs as might, at first thought, be supposed. This comparative scantiness is probably due—

1. To the action of gravity ; clear serum, draining down from regions in the nose to which the inspired air does not have free access, washes away the bacteria deposited by the tidal air.

2. To the action of the cilia supplementing that of gravity.

3. To the fact that the nasal mucus, while possessing little or no bactericidal power for most bacteria, is not a good medium for most bacteria to grow in.

4. To the filtering action of the vibrissæ, when they exist. (It will be remembered that children have none and women very few.)

5. To the fact that ordinarily the inspired air contains very few pathogenic germs, or, in other words, those germs accustomed to grow in body fluids.

We may conclude, therefore, that for bacteria which have developed in the blood or secretions of other individuals, the bactericidal power of the nasal mucus is little or nothing, and cannot be depended upon to prevent an infection from virulent bacteria if they are carried into the nose by our instruments.

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SOCIETIES' MEETINGS.

LARYNGOLOGICAL SOCIETY OF LONDON.

Ordinary Meeting, December 8th, 1897.

CRESSWELL BABER, Esq., M.B. *in the Chair.*

The Position and Condition of the Vocal Lips in the Chest and Head Registers.

Dr. JOBSON HORNE, on behalf of Dr. Musehold, of Berlin, showed a series of photographs of the larynx demonstrating the above conditions. Dr. Horne referred to the researches of Dr. Musehold, and drew attention to what he understood from Dr. Musehold to be the more important conclusions which had been arrived at with the help of the stroboscope, and which the photographs demonstrated.

In the chest register it was seen that the glottis is "opened and shut," whereas in the head register it is "widened and narrowed," a difference still more demonstrated with the stroboscope.

The cords themselves in the chest register, and more particularly in the production of loud chest-notes, showed a rounded or tumid form. This was accounted for by the expiratory current of air meeting with an increased resistance, and forcing the cords upwards; and it was the analogy of this condition of the cords with the condition of the lips when applied to the mouth-piece of a trumpet in producing loud notes that suggested the term "vocal lips" in the present instance.

The photographs further showed that the deposition of the mucus secreted on to the cords was along different lines in the two registers; this was attributed to a difference in the manner and intensity of the vibrations.

For a more detailed description of the photographs, and of the photographic apparatus and stroboscope used, Dr. Horne referred to Dr. Musehold's paper which had recently appeared in the "Archiv für Laryngologie und Rhinologie."

Defect of Speech resulting from Paresis of Soft Palate, occasioned by Lymphomatous Tumours projecting posteriorly from either side of the Septum. Shown by Dr. PEGLER.

The patient is a youth aged twenty-three. The defect of speech precisely resembled that of cleft palate.

There was complete nasal obstruction, depending upon hypertrophies and moriform bodies attached to both middle and inferior turbinates, etc., in addition to the septal growths. A diffuse lymphoid mass presenting a well-marked Tornwaldt's bursa lined the roof of the nasopharynx, but there were no post-nasal adenoids.

The appearance of the septal lymphomata and microscopical sections shown, displaying pure lymphoid tissue throughout, were described

in two recent numbers of the JOURNAL OF LARYNGOLOGY (9 and 12). The growths were exceedingly tough, and had been taken away by means of the turbinotome. The other sources of obstruction having also been removed, nasal respiration was quite free. A much thickened septum is exposed.

Papilliform lymphoid hyperplasiæ had been suspected to occur by Jonathan Wright and others, but these were the first that had been microscoped and recorded so far as Dr. Pegler was aware. The paresis of the palate was bilateral and reflex, and the defect of speech remained, but was improving.

The Case of Apparent Necrosis of Left Inferior Turbinate following Injury, shown at the Last Meeting by Dr. Pegler.

The patient was brought up again to show the condition of the nasal fossa after the loose body had been removed, and also the fragments themselves. The granulating surface was entirely healed over. The two pieces handed round had all the appearance of necrosed inferior turbinate bone encrusted with lime. The precise date at which pieces of dead bone had been extracted after the original accident had been ascertained. Dr. Pegler said he should be happy to have sections made if that were possible, and report again.

Papillomata of Faucial Tonsil. Shown by Mr. WYATT WINGRAVE.

The interest exhibited in Dr. Hill's cases shown at the last meeting, and the suggestion made by the President and Sir F. Semon, induced the exhibitor to present two examples occurring in his own practice.

1. Papilloma removed from the left tonsil of a man, aged forty-four. Consisted for the most part of a fibro-vascular core covered with fimbriæ of stratified squamous epithelium, with a few concentric bodies. Slight symptoms of irritation. Tonsils enlarged; with history of several quinsies.

2. Fibro-vascular papilloma removed from the right tonsil. It looked like a red polypus hanging from the surface of the tonsil, but under cocaine became anæmic. It apparently grew from a dilated lamina, and was removed by snare, coming out like a tooth. It was about two centimètres in length, and consisted of fibro-vascular and small-cell tissue, covered with smooth stratified epithelium. Sore throat and history of quinsies. Reported in JOURNAL OF LARYNGOLOGY, as "Polypus of Tonsil," Vol. VIII. p. 358.

The papillomata generally grow from the surface, while the so-called polypi spring from the interior of lacunæ. Their origin is suggested by examining sections of chronic lacunar tonsillitis, in which papillary excrescences will be found growing from the fundus and sides of dilated lacunæ. An exaggeration of such a condition would readily form a papilloma or a polypus.

Female on whom Tracheotomy had been performed, with Immobility of Left Cord and Partial Immobility of Right. Shown by Dr. J. W. BOND.

Female with Tumour of the Epiglottis. Shown by Dr. BOND.

Mr. DE SANTI thought that the tumour was too soft and vascular-looking for an epithelioma, and took the view that it was sarcomatous, and considered the enlarged glands to be a contra-indication to any operation.

Case of Paralysis of Left Vocal Cord and Dilator of Pupil, with Ptosis of the same side. Shown by Dr. SPICER.

T. R., aged fifty-nine, a gardener, complains of hoarseness and swelling in the neck.

Laryngoscopic examination shows the left vocal cord in the middle line, and immobile. There is no deformity in the larynx nor pathological changes. Left pupil contracted. Left upper eyelid in condition of ptosis. There is a mass of three or four enlarged glands under the left sternomastoid opposite the cricoid cartilage. Patient has taken iodide of potash for more than six weeks. No history of syphilis.

Query.—Mucous Patches on Fauces; Case for Diagnosis. Shown by Dr. SCANES SPICER.

Charles D., aged three. About four months ago the mother noticed a white, ulcerated-looking surface on the tonsils, uvula, and soft palate, which has never disappeared, but varies in its extent of surface. There are enlarged cervical glands, and swallowing is easy. Patient had "thrush," which lasted three weeks, when he was a month old, followed by an ulcer on eye and in the groin. He has also had an hydrocele. There has been no contact with diphtheria. When the white patches are removed the surface bleeds.

The diagnosis seemed to be between chronic diphtheria, mucous patches, lupus, tuberculosis, papillomata, and simple ulceration.

Dr. Plimner reports that there are diphtheritic organisms present.

A cultivation of the ulcerated surface shows streptococci and sarcinae.

The treatment had consisted of internal administration of chlorate of potash, but it had not altered during the past six weeks.

Dr. BARCLAY BARON had seen a similar case, which was not syphilitic.

Dr. LAMBERT LACK had a patient in whom a similar ulceration was combined with lupus, and he advised arsenic as an internal remedy.

Rapidly Recurrent Tumour of Nasal Septum. Shown by Dr. SPICER.

Albert H., aged thirty-five, sent to St. Mary's for epistaxis. On examination a spongy, very red and vascular growth is seen attached by a broadish base to right side of cartilage of nasal septum. A portion was at once removed with scissors, and felt hard on cutting through. It has grown again nearly to original size in a fortnight, and base is larger.

Report by Dr. PLIMMER.—Large amount of fibrous tissue; few sarcomatous cells; lymphoid tissue; very few vessels; prognosis as to benignancy favourable.

Dr. STCLAIR THOMSON was of opinion that the growth was simple in character, and was a fibro-angioma or bleeding polypus of the septum. He recalled a very similar case he had shown to the Society two years ago ("Proceedings," Vol. III., January, 1896). In that case the growth rapidly recurred soon after removal, and the sections of the growth were

found by some members to be so suggestive of sarcoma that they warmly recommended speedy and radical excision. However, the recurrence was simply removed with the snare, the base curetted, and then well seared with the galvano-cautery (without perforating the septum). He had kept the patient under observation, and now, at the end of two years, there had been no recurrence. The growth was declared by the Morbid Growths Committee to be a fibro-angioma, and he suggested that the sections in the present case might be submitted to the same Committee.

Mr. WINGRAVE suggested that the tendency to alveolation of the cells was in favour of its sarcomatous nature.

Cases shown by Dr. LAMBERT LACK.

A girl, aged six, and a boy, aged three, who have had congenital obstruction, to show the persistent malformation.

The two cases are in most respects similar. Both came under the care of my colleague, Dr. Sutherland, and myself, when a few weeks old, presenting all the characteristic signs of the affection known variously as *congenital laryngeal stridor*, *infantile respiratory spasm*, etc. The signs of laryngeal obstruction increased for some months, and then gradually passed off until, at two years of age, they had practically disappeared. The true pathology of this affection, hitherto generally considered a form of laryngeal spasm, was demonstrated in a recent paper by Dr. Sutherland and myself ("Lancet," September, 1897). We found that the epiglottis is folded laterally so sharply that its lateral halves come very close together, or even into actual contact. The aryteno-epiglottic folds, thus approximated, flap inwards at each inspiration, reducing the upper aperture of the larynx to a narrow slit or even completely closing it. In these two cases the stridor and other signs of laryngeal obstruction have completely passed off, apparently because the upper aperture of the larynx is larger, and the tissues forming it less flaccid than in infancy. The malformation of the epiglottis, however, remains unaltered—in the girl the folds being very close, in the boy in actual contact. This persistence of the curved epiglottis seems to me very important as showing (1) that although, as above stated, constantly present in this affection, and playing an essential part in its pathogenesis, it is not the actual curve of the laryngeal obstruction; and (2) that this form of epiglottis is not the normal type in infancy, as Escat and others have stated. The latter point is further shown by the fact that I have never yet found the malformation in a large series of examinations of the larynx in babies during the past two years.

Dr. HILL and Dr. GRANT had seen similar cases, and the former asked Dr. Lack if there was ever any subluxation of the crico-arytenoid joints in such cases.

Case of Tornwaldt's Disease. Shown by Mr. RICHARD LAKE.

The patient, a young woman, had been troubled for ten years by the crust formation, which she used to expel every second or third day. A point of interest in this case lies in the fact that the patient went to a throat hospital three years ago, and was treated for this trouble by

having her inferior turbinates removed, and she seems to believe she has since become somewhat worse.

Mr. CRESSWELL BABER had found the galvanic cautery applied with the aid of the rhinoscopic mirror of considerable benefit in these cases in arresting both the discharge and hæmorrhage.

Large Tumour in the Neck. Shown by Dr. DONELAN.

A man, aged fifty-six, with a large tumour occupying the left side of his neck from the temporo-maxillary joint to the clavicle. In last April the patient first noticed a small swelling behind the jaw, which was painless, but continued to grow until in September it was about the size of an ostrich egg. He then went to University College Hospital, where its removal was advised, but patient declined. Since then the growth had rapidly increased to its present size. There had been, however, no pain until within the last few weeks, when there was some neuralgia in the left side of head.

The points of interest to the Society were the paresis of the tongue, the immense displacement of the larynx to the right with paresis of left vocal cord, and swelling of left arytenoid body. The latter is difficult to see from overlapping of ary-epiglottic tissues and ventricular band. There was entire absence of dyspnœa and dysphagia, and but little change in the voice. On seeing the patient for the first time Dr. Donelan thought the case one of lymphadenoma, but now believed it to be a malignant tumour, probably sarcomatous. It was doubtful if anything could now be done.

Mr. DE SANTI considered this case to be one of malignant disease; probably primary epithelioma of the cervical glands. The mass was fixed, extensive, and of stony hardness. He could not get a view of the larynx. An examination of the œsophagus should be made. The case was quite inoperable.

Sketches and Specimen of Benign Tumour of the Tonsil. Shown by Mr. WAGGETT.

Sketches and Specimen of Papillary Hypertrophy of the Tonsil. Shown by Mr. WAGGETT.

This patient has complained for about six months of "stoppage in the nose." About two months ago he came to the London Hospital, and some polypi were removed from both nostrils. The posterior ends of both inferior turbinates were also removed, and he ceased attending for the time. The polypi were not examined microscopically, but gave rise to no suspicion of being anything beyond simple polypi.

Patient returned again on December 8th, appearing very ill. No polypi were seen anteriorly. On digital examination a hard mass about the circumference of a shilling was felt on the posterior naso-pharyngeal wall, apparently growing from the first or second cervical vertebræ in the middle line. It was very tender to the touch, and bled slightly after examination. There was no impairment of movement of the cervical vertebræ.

Dr. HERBERT TILLEY instanced a case recently seen by him in which

it was almost impossible to get the finger into the naso-pharynx because of the prominence of the upper cervical vertebræ. The patient was well built, with no obvious deformity in the neck.

Dr. DUNDAS GRANT said he had referred elsewhere to such a prominence simulating the presence of adenoids.

Mr. CRESSWELL BABER said he had not had an opportunity of making a thorough examination in this case, but he had noticed considerable thickening of the soft palate, and prominence of the tubercle of the atlas.

Soft Swelling in the Neck. Shown by Dr. PEGLER.

Patient was a young female with a large swelling in the neck, apparently extending outwards and backwards from beneath the left sterno-mastoid.

Dr. HERBERT TILLEY said that by getting a strong light behind it and examining it like a hydrocele, a small amount of light penetrated it, and from its feel he thought it was cystic.

Mr. DE SANTI looked upon this case as one of cystic nature, probably cystic hygroma. Probably the fluid was thickish and the aspirating needle small, thus accounting for the negative result on puncturing. It might be a very soft fatty tumour; but its shape, situation, history, and non-adhesion of the skin and absence of lobulation were against this diagnosis. He advised an exploratory incision.

Case of Persistent Branchial Cleft in Neck. Shown by Dr. DUNDAS GRANT.

Symmetrical Ulceration of Tonsils, Perforation of Nasal Septum, in a Young Boy. Shown by Mr. ATWOOD THORNE.

A boy, aged thirteen, under the care of Dr. William Hill (by whose permission the case was shown).

On admission the boy had been ill for three weeks, complaining of a "cold, sore throat, and running from the nose."

Examination showed symmetrical inflammation of both tonsils, spreading on to the soft palate, and with a well-defined margin. The right tonsil contained a cheesy mass, which was removed, and the cavity painted with chromic acid. The glands behind the sterno-mastoid were enlarged and hardened on both sides.

There was a blood-stained discharge from both nostrils, and a perforation of the bony septum, covered with scabs. Over the chest there was a well-marked macular rash.

Mr. Thorne suggested as a provisional diagnosis "secondary or early tertiary syphilis."

Mr. CRESSWELL BABER suggested that the case was one of congenital syphilis, and considered that one of the teeth was somewhat suggestive of that disease.

Dr. HILL concurred in this opinion.

Dr. ATWOOD THORNE, in reply, said that the family history seemed to negative "hereditary syphilis." Both history and examination contra-indicated tubercle.

Annual General Meeting, January 12th, 1898.

HENRY T. BUTLIN, Esq., F.R.C.S., President, *in the Chair.*

Two Pressure Pouches of the Œsophagus. Shown by Mr. BUTLIN (President).

Removed from living subjects. The references are to be found in the "Medico-Chirurgical Transactions," Vol. LXXVI., p. 269, 1893, and in the "British Medical Journal," 1898, Vol. I., p. 8. The attention of the members of the Society is particularly directed to the return of particles of undigested food many hours or even days after they have been swallowed, as the one constant symptom in the diagnosis.

Nasal Hydrorrhœa—Analysis of Liquid.

Mr. CRESSWELL BABER read notes of this case, and brought forward the analysis of the liquid. Patient, a married lady aged forty-two. The right side of the nose only affected. Five years before, after eight months' excessive watery discharge following influenza, she had had a polypus removed; the secretion then stopped, but returned again at Christmas, 1896, after another attack of influenza. A polypus was removed in May, 1897, and the galvanic cautery applied, but as the secretion still continued the case was referred to me. When I first saw her, on June 16th last, there was no obstruction, very little sneezing, no pain, only profuse non-fœtid watery discharge from the right side, which continued day and night. No headaches of consequence. Examination showed that the right nasal cavity was much narrowed by deflection of the septum, and the mucous membrane was sodden and catarrhal in appearance. No polypus, but a little irregularity on the middle turbinated body. Transillumination showed both infra-orbital regions light, and nothing came out of the right antrum on hanging down the head. The fundus was normal in both eyes. No loss of sensation could be detected in the right nasal cavity. Spirit and cocaine spray was tried, but without any effect; the dripping of watery liquid continued constant, and on one occasion (July 17th) I collected seventy millimètres in five minutes. On this date I began the constant current, applying eight cells externally to the nose. This stopped the secretion for a few minutes. Patient was ordered to use it for five minutes twice a day. In a week's time (July 24th) she reported that the running was rather less in the mornings, but when I saw her it still continued. A small piece of projecting mucous membrane was snared from the middle turbinated body, but only proved to be hyperplasia of normal tissue. Ordered, in addition to the constant current, a twenty per cent. solution of menthol in paroline for a nasal spray twice a day. I did not see the patient again till September 15th, when she reported that about a month previously the running began to diminish, and had got so much less that she only used two handkerchiefs daily instead of twelve. Character of the secretion as before. Treatment continued. October 5th.—No watery discharge at all for the last four days. Examination shows that there is much less

swelling of the mucous membrane in the nasal cavity. To use spray and galvanism once a day only for three weeks. November 3rd.—No discharge at all from the right side since the last visit. Omit all treatment. Letter received from patient dated January 3rd, 1898, reports that there has been no return of the nose trouble. About an ounce of the liquid was sent to the Clinical Research Association, and they report that its chemical composition is as follows :

						Per 100 c.c.
Organic solids	...	...	...	...	...	0·160 gramme.
Containing—Mucin	...	...	...	...	...	0·060 "
Proteids	...	...	...	...	...	0·025 "
Undetermined constituents...						0·075 "
						0·160 "
Inorganic solids	...	...	...	...	...	0·880 gramme.
Containing—Sodium chloride	...	...	...	...	...	0·770 "
Calcium phosphates, etc.	...	...	...	...	...	0·110 "
						0·880 "

Microscopical examination showed the presence merely of a few squamous epithelium cells and a few leucocytes. They note that the greater proportion of the solid matter consists of sodium chloride, and that the proportion of this closely approximates to the "normal saline" fluid.

From the absence of head symptoms, and especially from the beneficial effect of the continuous current, I think we are justified in concluding that the liquid in this case is simply an excessive secretion from the nasal mucous membrane, and not an escape of cerebro-spinal fluid. It seems probable that many of the cases reported may be explained in a similar manner.

Dr. STCLAIR THOMSON said that the analysis which had been made for Mr. Baber was unfortunately, so far as the question of cerebro-spinal fluid was concerned, most incomplete. Since he had shown his case to the Society, he had assisted at repeated analyses of cerebro-spinal fluid, and also of other fluids from the nose which were supposed to come from the subarachnoid space. In hopes that other members might come across similar cases, he would just recapitulate the chief points which were characteristic of cerebro-spinal fluid. It was perfectly colourless and limpid, feebly alkaline, varying in specific gravity from 1005 to 1010, contained no albumen, but traces of a proteid which was found to be globulin ; it reduced Fehling's solution, but it did not contain sugar, for it failed to give the fermentation test with yeast. This reducing body was pyrocatechin, which had a pungent taste, and formed particular crystals. The analysis of the present case gave no information on these points.

Dr. DE HAVILLAND HALL asked Mr. Baber if he thought that the menthol spray had any real effect on the issue ; his experience was that it rather increased the discharge from the nasal mucous membrane.

Mr. BABER thought it was the constant current rather than the menthol spray that had had the beneficial effect in this case.

Radical Operation for Frontal Sinus Disease.

Mr. ERNEST WAGGETT showed a patient on whom he had performed Luc's operation five weeks previously for right frontal sinus suppuration of many years' standing. The skin incision followed the line of the eyebrow, and the trephine hole was made immediately above the superciliary ridge. The sinus was completely cleared of all the mucous membrane, which was throughout polypoid and bathed with pus. Attention was drawn to the advantages of carefully suturing the periosteum over the trephine hole, and of removal of the anterior end of the middle turbinate. From the first the cavity was irrigated by passing a fine flexible tube up through the drain-tube. The latter was removed on the thirteenth day. No pus had been seen since the operation, symptoms were absent, no depression of the bone could be detected, and the skin scar was unnoticeable.

Dr. HERBERT TILLEY thought that the case was a good illustration of the value of the incision through the line of the eyebrow, for the resulting scar was scarcely noticeable. He mentioned this because one authority on frontal sinus disease had maintained that a median vertical incision should be made in every case, whether the symptoms were uni- or bi-lateral. Mr. Waggett's case was at least the second or third which had been before the Society, and in which the value of the supra-orbital incision was very evident.

New Instrument—Turbinotomy Cautey.

Mr. ERNEST WAGGETT showed a galvano-cautey point, practically of the same shape as Jones' turbinotome, a hot platinum wire taking the place of the cutting edge. He has used it to remove hypertrophies of the mucous membrane of the turbinates, particularly moriform bodies. All hæmorrhage is avoided and the shrinkage caused by cocaine rather facilitates matters than otherwise. The copper wires should be thick, so as to avoid over-heating by the current.

Trigeminal Neuralgia relieved by Turbinectomy. Shown by
WALTER G. SPENCER.

The patient was a carpenter, aged forty-six, who had had good health, and had not suffered in any similar way before. In April, 1897, he was in bed for two days with influenza. Some days afterwards, at nine a.m., he was suddenly seized with severe pains in his face. The pains first occurred in the lower lip and skin over the left side of the jaw, then on the cheek over the infra-orbital foramen, over the supra-orbital nerve at the back of the eye, and at the back of the nose. He became dazed, and cannot remember his journey home from work; he is said to have staggered up the street like a drunken man. His memory is also a blank for the next fortnight. He suffered from neuralgia involving all the branches of the fifth nerve, attended by most severe paroxysms of pain, for which his doctor had to give opium and morphine in increasing doses. My colleague, Dr. Allchin, was after three weeks called to a consultation, and he concurred in the treatment by opium and morphine in large doses,

The patient got somewhat better, but on account of the pain could not sleep well at night, nor concentrate his attention on any work. He was much depressed, and opium or morphine was required when the pain became severe. This was his condition in September, after he had been ill five months, and Dr. Allchin then consulted me with a view to some surgical measure. I could not insert a speculum into the left nostril, on account of hyperæsthesia, until he had been given an injection of morphine. The interior of the left nostril showed no definite disease. On touching the interior with the end of a blunt probe, nothing occurred until I touched the anterior part of the left middle turbinal, when a severe paroxysm of pain and itching was set up of the kind from which the patient had been suffering. After the nostril had been treated with cocaine twenty per cent. the middle turbinal could be touched without exciting the above symptoms.

No other lesion was found; in particular there were no signs of antral disease. Some teeth had been removed without affording any relief. I and Dr. Allchin agreed that, assuming the neuralgia to have originated from an attack of influenza, it was not unlikely that the neuralgia would in course of time pass off. Therefore we considered that there were then scarcely sufficient indications for surgical treatment of the three roots of the fifth nerve, or of the Gasserian ganglion. I proposed to try removal of the middle turbinal for much the same reason as a specially tender tooth is extracted in the hope that it may afford relief to trigeminal neuralgia. I therefore excised the middle turbinal, taking away also the anterior end of the inferior turbinal to obtain room. I found nothing abnormal in the tissue removed, and it was not in contact with the septum. From the time of the removal the patient has never had any pain, and has not required any narcotic. He has slept well, recovered his spirits, and has been at his work for three months. He still has however, at times, itching in the distribution of the terminal ends of the fifth nerve on the face, also at the back of the eye and nose. This annoys him and tempts him to scratch, but does not prevent his work. It is worse in the day, and is quite relieved by lying down, whereas the old pain was worse when lying down. The interior of the left nostril is now hyperæsthetic, so that the patient is easily made to sneeze, but no pain or itching is excited by touching the interior. I have told the patient that this itching will pass off in time, but I shall be glad to learn of any means of hastening its disappearance.

Mr. CRESSWELL BABER mentioned the use of common salt as a snuff in cases of facial neuralgia, and also suggested the use of the galvanic cautery where very sensitive spots on the nasal mucous membrane were detected.

Dr. SPICER said that the patient's nasal passages were still deficient, and were producing an "exhaustion rhinitis"; he advised the use of dilators to alleviate the chronic rhinitis, and removal of a small spur which was present.

Dr. STCLAIR THOMSON said that the present case confirmed what he had ventured to insist upon elsewhere,² viz., that every case of trigeminal

² "The Year Book of Treatment" for 1897.

neuralgia should be submitted to a thorough exploration of the nose and accessory cavities before operative procedures were undertaken. He happened to know of cases where extensive, dangerous, and in some instances unsatisfactory operations on the Gasserian ganglion had been carried out, and where the idea of examining the nose had never been even entertained. Amongst other instances of trigeminal neuralgia relieved by intra nasal medication, he instanced one where a medical man had placed himself under the care of a distinguished neurologist who had referred the case to Dr. Thomson, although the patient himself was perfectly convinced that he was suffering from "brow ague," having passed some years in the tropics, where he contracted malaria. He scouted the idea of the "brow ague" being due to an empyema, and was only convinced when an exploratory puncture expelled a quantity of foul-smelling pus, and drainage at once cured his neuralgia. As to labelling the present a case of "cure," he thought we should be a little careful of using that term when the objective symptoms in the nose had been so slight. We all knew the beneficial effects of operation *per se*, and these were especially marked in the case of idiopathic trigeminal neuralgia. In Sir William Gowers' well-known text-book on nervous diseases there was the record of a case which an American author had traced for some dozen or so years. During this period the one individual's case had been published by something like fifteen different physicians, and each one claimed to have cured him.

Subpharyngeal Cartilage of the Tonsil.

Mr. WYATT WINGRAVE exhibited microscopic sections of tonsils showing small islands of hyaline cartilage representing the *subpharyngeal cartilage*, a rudiment of the third visceral arch.

The cartilage was enclosed in the connective tissue of the bed of the tonsil, but according to MacAlister it is generally situated beneath the mucous membrane below the tonsil, and often attached to it.

He had found three examples in about 200 cases examined.

Larynx of Patient shown at Meeting held November 10th, 1897.

Dr. HERBERT TILLEY stated that shortly after the November meeting the patient died, after suffering for three or four days from fever, intense headache, and delirium. Only the larynx and the brain were available for examination. The base of the latter was thickly covered with lymph and other evidences of meningitis.

The larynx exhibited extensive superficial ulceration of the right vocal cord and process, but the left side was healthy. A small track led through the mucous membrane of the right arytenoid cartilage, the latter being felt bare at the end of the sinus.

When seen during life the right cord was rigidly fixed during phonation; there was an enlarged gland in the right submaxillary region; and what appeared to be a greyish mass was seen situated in the position of and hiding the right vocal cord. The almost unanimous opinion then was that it was a case of malignant disease, but the exhibitor thought that the recent history indicated tubercular laryngitis, and at his sugges-

tion the growth was referred to the Morbid Growths Committee for more detailed examination.

Case of Malignant Disease of Larynx. Shown by Dr. FURNISS POTTER.

A man, aged sixty-four, who came under observation complaining of hoarseness for nine weeks previously, but who in other respects was in good health. On examining the larynx, the left side was seen to be occupied by an extensive infiltration, involving the arytenoid region, the ventricular band, and the aryepiglottic fold; the left vocal cord was invisible, and the crico-arytenoid joint appeared to be fixed and immovable.

There was no history of syphilis, and no complaint of pain except a little occasionally shooting into the left ear; there was no dysphagia, but slight stridor occasionally. The patient had been put on potassium iodide in doses increasing to twenty grains three times a day, but as yet with no appreciable result.

Papillomata of Larynx.

Dr. BRONNER (Bradford) showed a large number of papillomata removed from the larynx of a man, aged forty-eight, on December 13th. On several previous occasions growths had been removed, the last time in March. Various local and external remedies had been used.

On December 13th patient had a violent attack of dyspnoea whilst in a railway carriage, and was unconscious for some time (?).

Dr. Bronner wished to have the advice of the Society as to whether laryngotomy or tracheotomy should be performed, or if the growths should be periodically removed *per os*.

Mr. BUTLIN and Sir FELIX SEMON concurred in the view that thyrochondrotomy would afford no guarantee against recurrence of the growth, and might induce other undesirable complications.

Mr. SPENCER suggested that a crico-tracheotomy might be useful in enabling the operator to more efficiently remove the growths.

Complete Recurrent Paralysis.

Mr. SYMONDS exhibited a man of sixty-one, showing the left cord lying in the cadaveric position. The patient had a stricture of the œsophagus twelve and a half inches from the teeth, and gave a history of nine months' dysphagia, with loss of voice for four months. When first seen two months ago, the condition was identical with that now existing. The case was brought forward to illustrate paralysis of the lateral muscle following upon that of the posticus, which was presumed to have preceded the present stage. The patient also exhibited well the inability to speak a sentence of more than a few words, and gave a good view of his larynx.

Sir FELIX SEMON said he could not agree to this being a case of adductor paralysis, and expressed a hope that his friend Mr. Symonds would see his way to change the title of his communication. Adductor paralysis clearly meant that a vocal cord could not be properly adducted on intended phonation, whilst on deep inspiration it freely went outwards

In the present case, however, the vocal cord stood motionless between the phonatory and ordinary cadaveric position, and there was no question of adductor paralysis. He made it a point to protest against the title, because otherwise it would be almost certain to be made capital of. Of greater importance, however, than this individual case was another question he wished to submit to the Society. Was it not time to altogether abolish the expressions "adductor" and "abductor" paralysis? No doubt they were convenient enough, but somehow or other there seemed to be a sort of fatality about misprints with regard to these two expressions which but too often absolutely spoilt the author's meaning. He instanced several recent experiences of his own to that effect. In Germany, following an analogous proposition of Prof. Moritz Schmidt, the two expressions had almost completely vanished. If the words "glottis openers" and "glottis closers" were considered to be too clumsy, why not simply speak of "posticus," "lateralis," "externus," etc.?

In his reply to remarks by Sir Felix Semon, Mr. SYMONDS recast the original title of the case from that of adductor paralysis.

Removal of Half the Larynx. Shown by Mr. SYMONDS.

Mr. S— was brought before the Society in February, 1897, with fixation of the right cord, and a diagnosis of early carcinoma. The general opinion at that time was in favour of tubercle. A gland made its appearance in the end of April, and was removed March 17th. It had grown with great rapidity, and was already softening. The right half of the larynx was removed April 20th. The man was brought forward again, not to show the result of the operation, but because it was thought members would be interested to recall the early appearances. At present the man does full work, and has a moderate voice.

Subglottic Carcinoma(?) Shown by Mr. SYMONDS.

A man of fifty-five had been hoarse six months. He came under treatment at Guy's Hospital in December with grave stenosis of the larynx. Both cords were fixed, and were visible; the chink was in the centre, and was elliptical in shape; the left cord appeared then slightly pushed up. The arytenoids were fixed. Tracheotomy was necessary on January 1st. The diagnosis lay between malignant disease and syphilitic perichondritis. There was no breach of surface, but there was an abundant foul expectoration. The man was then in low health. Mr. Symonds regarded the case as one of subglottic carcinoma, and asked for an expression of opinion.

Note.—At the meeting Mr. Symonds reported that since his last examination of the patient three days ago, when the above report was written, a marked change had taken place. The left side had become more prominent, and a whitish edge was visible along the left cord—appearances pointing to malignant disease.

January 17th.—Mr. Symonds sends a note to say the whole interior of the larynx has become swollen, that a papillated whitish mass can be seen in the position of the left cord, leaving no doubt of the malignant nature of the case. The general health has greatly improved.

Formative Osteitis (Leontiasis Ossium). Shown by Dr. WATSON WILLIAMS (Bristol).

A specimen of the septum nasi and a portion of the frontal bone and left malar bone from a male, aged forty-six. There was no history of syphilis, and no known cause for the disease.

Post-mortem examination.—The patient presented large, smooth, bony thickenings on either side of his nose, and a smaller boss on the left side of the forehead.

On removing the cranium pus was found situated between the dura mater and the bone over the frontal lobe. This pus seemed to have originally started from the frontal sinus on the left side, which was full of pus. The frontal sinus on the right side was found to be obliterated by soft cancellous bone. The pituitary body was normal in size.

Examination of the nose showed that the sphenoidal sinus and ethmoidal cells were entirely obliterated by cancellous bony growths. The cavity of the nose on the left side was almost entirely filled up by growth from the septum. Apparently also the antra of Highmore were completely filled up with cancellous bone formation. The bones in the face were found to be growing from the malar and upper part of the superior maxillary bones. There was nothing noteworthy about the other organs, and no deformity of bones elsewhere.

Case of Clonic Spasm of Pharynx. Shown by Dr. LAMBERT LACK.

The patient, a girl aged nineteen, came under observation at the Throat Hospital about two months ago, complaining of "phlegm in the throat." On examining the pharynx, one at once notices a twitching movement of the posterior pharyngeal wall, which seems to be sharply drawn to the left and then relaxed. The movement curiously resembles nystagmus. The palate sometimes seems to move slightly in association. The larynx is healthy, and there is no twitching of the laryngeal muscles. The patient has some chronic rhinitis, but otherwise is in robust health, and is not of a specially nervous disposition. This pharyngeal spasm has been constantly present every time the patient has been seen in the last two months, but its duration beyond that is doubtful, as it apparently gives rise to no symptoms.

The case seems identical with that of a man shown by Dr. Bond during the last session of this Society, and is brought forward in the hope that other members in the Society will state their experience of this apparently rare affection, or give some information as to its etiology or pathological associations.

President—H. TRENTHAM BUTLIN, F.R.C.S.

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TWELFTH INTERNATIONAL MEDICAL CONGRESS,
MOSCOW.

August, 1897.

Dr. MOURE *in the Chair.*

SECTION OF LARYNGOLOGY AND RHINOLOGY.

Prof. UCHERMANN (Christiania). *Laryngitis Acuta Rheumatica Circumscripta (Nodosa).*

Rheumatic affections of the larynx receive too little attention; indeed in text-books they are scarcely mentioned at all. Sometimes they are suggested as a possible cause for paralysis of the nervus recurrens when no other cause can be found, or when the paralysis is recovered from. Again, it is here and there stated that in the course of rheumatism an affection of the crico-arytenoid joint may occur, with perhaps ankylosis as a consequence.

The disease was first described by Ingalls at the Ninth International Congress, at Washington. There is, however, another form in which these rheumatic laryngeal affections occur, viz., as inflammation accompanied by infiltrations. If these infiltrations occur around the crico-arytenoid articulation, they produce a pseudo-ankylosis with fixation of the vocal cord; and this, unless properly treated, may become permanent. Many so-called recurrent paralyses are doubtless really cases of this peri-articular rheumatic infiltration. The symptoms of this form of rheumatism of the larynx are otherwise the same as those of the better known (Ingalls') form: inflammation without hypersecretion, etc., etc.

Similar rheumatic infiltrations are to be found on the velum palati, on the pillars of the fauces, on the septum nasi, on the inner end of the meatus auditorius, and even on the membrana tympani. They have also been described as occurring on the conjunctiva.

Erythema nodosum and multiforme have much in common with the above. With regard to differential diagnosis, it is often difficult to exclude syphilis; indeed this can often be done only by testing the effects of potassium iodide and salicylic acid. Laryngitis oedematosa is more easily excluded.

The author concluded his paper by quoting a number of cases.

Dr. T. R. FRENCH. *On Photography of the Larynx.*

In the absence of Dr. French, Dr. J. W. Gleitsmann showed for the former an elaborate album of photographs, which contained not only a complete series of photographs from the beginning to its present state of perfection, but also drawings of the different instruments and cameras in their gradual state of development.

Portable Acetylene Lamp.

Dr. CUVILLIER showed a portable acetylene lamp for use in laryngology.

Prof. COZZOLINO (Naples). *On Ozæna.*

Bacteriological research in different periods of the disease were first considered, their fundamental characteristics and differences being noted, and the cocco bacillus of Loewenberg specially referred to. Afterwards micro-organisms which are constantly present or accidentally found in the nasal passages, were gone into. The author next compared ozæna with the other pathological conditions of the nasal mucous membrane supposed to be due to micro-organic life. The paper dealt with the question of the chemical, histological, and bacteriological aspects of the subject, and lastly experimental therapeutics. The possibility of a specific sero-therapeutic treatment was referred to, with negative results in injections of the antidiphtheritic serum.

In the second place the paper dwelt upon the importance of the bacteriological diagnostic element in inflammations of the nostrils, acute and chronic, with exudations and hyperplasia. The author took up more particularly the bacteriological examination, with a view to complete diagnosis generally in affections of the nose and throat. He held that in many cases confirmatory evidence could be got, and sometimes in the absence of other signs. He quoted the conditions of ozæna, acute coryza in such affections as influenza, diplococci, streptococci, diphtheria, and lastly the more chronic affections such as tuberculosis, rhinoscleroma, lupus, leprosy, etc.; and further pointed out the importance of examination in acute or chronic conditions with developments in the sinuses, or in the skin in the region of the nostrils, such as erysipelas and lymphangitis due to staphylococci, etc.

Meeting, August 25th, 1897.

CUBE (St. Petersburg). *Demonstration of an Instrument for Applying Silver Nitrate to a Limited Surface of Mucous Membrane.*

In the treatment of chronic atonic ulcers of the larynx stimulation was needed, and at the same time protection of the part. These two objects were most easily attained by cauterizing the ulcers with nitrate of silver; for first this acted as a caustic, then left the part covered with a protective layer. More harm than good was done, however, if the action of the caustic was not strictly limited to the one part, but was allowed to extend to the surrounding healthy mucous membrane. In the same way even small growths on the vocal cords may be successfully treated. What made their treatment as a rule unsuccessful was that while the growth itself was cauterized, the surrounding mucous membrane was so strongly irritated that in the end only harm was done. His instrument consisted of an ordinary Pravatz syringe, to which was attached a long, fine, suitably bent canula; at the distal end of the canula was a small button, and close to this an eye.

In using it the syringe and canula were filled with carbonate of soda,

and the Ag NO³ melted on to the button ; then, having carefully touched the part to be cauterized with the button, immediately press a few drops of the soda solution out through the eye of the canula, and the action of the caustic is limited at once.

CATTI (Fioume) maintained that vocal nodes would never be cured without surgical (*i.e.*, cutting) treatment. Further, while admiring the ingenuity of the instrument, he thought that anyone with a fair technique did not require anything of the kind.

CUBE, in reply, stated that even nodules on the cords could be cured so, if only the nodule was touched and none of the surrounding mucous membrane irritated.

Dr. OKADA (Tokio) demonstrated some *Microscopic Sections of Nasal Mucous Polyphi*.

SOCIÉTÉ PARISIENNE D'OTOLOGIE, DE LARYNGOLOGIE, ET DE RHINOLOGIE.

July 9th, 1897.

(" Arch. Internat. de L., O., R.," July-Aug. and Nov.-Dec., 1897.)

M. MARTIN (*President*) in the Chair.

Traumatic Laryngitis following Intubation of the Larynx in Children.

Mr. GLOVER read, on behalf of M. Variot and himself, a long paper on this subject, demonstrating, among other interesting matter, the importance of regulating the size of the tube in accordance with the size, and not the age, of the child.

Treatment of Suppurative Otitis with Picric Acid.

Dr. LACROIX has for more than a year employed one per cent. or saturated (one in eighty-seven) solutions of picric acid for various forms of middle-ear suppuration, and, for the most part, with highly satisfactory results.

Picric acid is not only a good antiseptic and a mild analgesic, but it favours epidermization in a marked degree. The formula usually employed has been—

Picric acid	0.20 gr.
Alcohol (90°)	3 gr.
Distilled Water	20 gr.

Twenty drops to be instilled (warm) night and morning, and allowed to remain for five minutes. The mucosa is found to be covered with epidermic

débris after the use of the drops, and copious irrigation is necessary to cleanse the ear. This desquamation and hardening of *débris* makes the use of the drug inadmissible where cholesteatoma is to be feared.

The author reports a number of successful and rapid results in sub-acute cases which had resisted other methods. In some instances the application of drops caused the discharge to cease in a few days, while perforations healed readily. In a few, viz., chronic cases complicated with caries, the results have also been good, though prolonged treatment has been necessary, the solvent action of the acid on the mineral salts of bone doubtless aiding in the issue.

In a few cases the acid seems to have caused considerable irritation, and swelling, and the author considers its use inadmissible where there is acute inflammation or any eczematous condition of the meatus. It is unfortunate that the skin is stained bright yellow by the acid, but this can be washed off with a saturated solution of carbonate of lithia.

In reply to M. LUBET BARBON the author stated that the lavages of picric acid should be made daily, in order to prevent accumulations of coagulated albumen.

Dr. LUC and Dr. JACQUIN. *A Case of Suppurative Phlebitis of the Lateral Sinus, following Accidental Opening of that Vessel. Death.*

The case of a girl of nine years, on whom the mastoid operation was performed for chronic attic disease. The antrum was found to be full of pus and granulations, and in the course of curetting the walls the lateral sinus was opened. At first all went well, and the gauze plugging was not disturbed until the seventh day. On the fourteenth day rigors commenced and recurred in spite of antiseptic irrigation until the nineteenth day, when Dr. Luc first saw the patient. The wound gave no special indication, auscultation of the lungs was normal, and metastatic phenomena were absent. On the following day the lateral sinus was laid bare by an extensive operation. This vessel was occupied by a greyish clot, broken down at one point so as to constitute an intravenous abscess. The vessel was cleared until copious hæmorrhage occurred at both proximal and distal end of the sinus. The walls appeared to be extensively diseased and surrounded by granulation tissue. In spite of careful antiseptic swabbing and dressing rigors recurred, and the child died on the fourth day.

M. LERMOYEZ doubted if the accident to the sinus was responsible for the event; he believed that sinusitis never followed such an accident, and that it was good surgery to leave the plug undisturbed for eight days.

M. LUBET-BARBON agreed. He thought it wise to leave the second dressing undisturbed for fifteen days, as redressing was more likely to cause infection than was the original accident.

M. MÉNIÈRE had seen a good result where the dressing was left untouched for eight days.

M. LUC, in reply to a question of M. Lermoyez, thought that periphlebitis was probably not present at the first operation, but that infection was due to the accident. Had periphlebitis been present, hæmorrhage would not have occurred so readily.

Dr. LUBET-BARBON. *Laryngeal Hæmorrhages in the Course of Alcoholic Cirrhosis.*

The case of an alcoholic man of forty, with cirrhosis of the liver, ascites, turgescence of facial and nasal venous radicles. Morning epistaxis was habitual, but the lungs were healthy. Loss of voice had been noticed one month, and for several days the patient had been spitting blood in small quantities.

Examination showed the trachea to be fairly healthy, but the interior of the larynx was red, as if bathed in blood, and in the interarytenoid space and on the right vocal cord small brown blood-clots were seen. On removing these with a cotton swab, blood could be seen oozing from the surface of the vocal cord.

Dr. LICHTWITZ. *Escape of a Voluminous Cholesteatoma through an Extensive Breach in the Bony Wall of the Meatus.*

The case of a woman of twenty-five, the subject of recurrent otorrhœa from childhood. Symptoms did not amount to more than a sense of fulness in the head and deafness. On examination the posterior superior wall of the osseous meatus seemed to be covered by a greyishwhite, velvety mass, friable when probed. Cholesteatoma was diagnosed, and attempts were made to remove it by irrigation. Some inflammation of the soft tissues and periostitis of the meatus followed, and when this had subsided, a mass the size of a large nut (*grosse noisette*) came away. The next day a similar and slightly larger mass was removed, and the carious walls of a large spherical cavity laid bare. The whole of the posterior wall, with the exception of its lower edges, was found to be absent.

NEW INSTRUMENTS.

M. MARTIN showed a *Punch Forceps* (figured) for Removal of Nasal Hypertrophies.

M. RUAULT had already employed a similar instrument, and had found very little hæmorrhage follow its use.

In reply to M. EGGER, M. MARTIN said that the punch cut cleanly, and did not crush the tissues.

Ernest Waggett.

ABSTRACTS.

NOSE, &c.

Alexander, A. (Berlin).—*Nasal Polypi in their Relations to Empyemas of the Accessory Cavities of the Nose.* "Archiv für Laryngol. und Rhinol.," Band V.

PREVIOUS to the publication of Ziem's paper on nasal suppuration in 1886 polypi were supposed to originate in consequence of chronic catarrh of the nasal mucous membrane. After this, however, attention was gradually called to the connection

existing between nasal polypi and antral empyema, and subsequently to their relation to affections of the other accessory cavities. Differences of opinion early arose as to whether the empyema caused the polypi, or *vice versa*, etc. This paper is a contribution to the solution of the problem.

The author has had at his disposal the large material of the Berlin University Polyclinic for Diseases of the Throat and Nose. In 27,600 patients, seen in nine years, 850 cases of polypi (three per cent.) and 276 cases of empyema (one per cent.) were treated. Only those cases which the author had repeated opportunities of examining have been utilized; they amount to 274. A brief summary of each case is given.

Of the 274 cases, 104 sought treatment for nasal polypi, and in thirty-five of these (33·6 per cent.) empyema was subsequently found to be present. In 170 cases empyema was diagnosed at the first examination, and in forty-five of these it was associated with nasal polypi. Therefore, in 149 cases of polypi, empyema was also present in eighty. The cavities affected were: the antrum in fifty-seven patients; the frontal sinus in one; the sphenoidal sinus in five; the ethmoidal cells in eight; and several cavities in nine.

The author points out wherein his statistics vary from those of Grünwald, and attributes the discrepancies to the modes of examination employed, and to the interpretation of the conditions found by the respective observers. He then describes the signs to which he attaches importance and the diagnostic methods he uses.

The question as to whether polypi or empyema is the primary condition—involving the consideration of the manner in which polypi arise, and the investigation of certain processes which take place in the bone—is discussed at length.

He regards polypi as inflammatory hyperplasias. The proliferating mucous membrane is thrown into folds, some of which become cedematous and form polypi. The cedema he attributes to congestion. The changes in the bone consist in an increased porosity of the middle turbinate, due not to osteoporosis, but to rarefying osteitis. The relation of the outer and inner mucous membrane coverings to each other, and to the bone of the middle turbinate, is of such an intimate nature that an affection of one surface must be directly conveyed to the other. Thus, if a primary empyema of the ethmoidal cells is present, and the lining membrane in consequence becomes hyperplastic and cedematous, and perhaps also undergoes polypoid degeneration, the nasal mucosa covering the turbinate will in a short time be similarly affected. The same holds good for the antrum, the extension of the pathological processes taking place in the middle meatus where the two mucous membranes may be directly contiguous.

The flow of pus from the cavity over the mucous membrane of the middle meatus and middle turbinate is not the sole factor leading to the origin of polypi. The author thinks that the direct extension of the inflammatory process from one mucous membrane to another is much more important. The nasal mucosa is thus in a manner attacked from two sides, and ultimately the large products of an inflammation which has led to hyperplasia and circulatory disturbances, fill the nose. From these considerations the author holds that an antral empyema may give rise to suppuration in the ethmoidal cells, and *vice versa*. On the other hand he does not think that the mere flow of pus from one cavity into another leads to a purulent catarrh in the latter; nor that simple closure of a cavity is followed by empyema.

A. B. Kelly.

Amyot, J. A.—*Rhinolith with Button for Nucleus.* "Canadian Practitioner," Jan., 1896.

BUTTON pushed in nose when child was four years old. Secretion in time became

fœtid and irritating. Cause not known until rhinolith was removed. Weight of concretion and nucleus thirty-two grains. Age at time of operation twenty-five years.
Price Brown.

Bergeat, E. (Munich).—*Intranasal Conditions in the Skulls of Various Races seen by Anterior Rhinoscopy.* "Archiv für Laryngol. und Rhinol.," Band VI., Heft 1.

EVEN a hasty rhinoscopic inspection of skulls of various races frequently reveals great dissimilarities, in consequence of variations in the size and position of the individual parts on the outer wall of the nose. In order to study these relations the author has examined the anatomical collection in Munich.

The nasal septum is not considered, the only remark made regarding it being that in Indians it joins the palatine crest usually somewhat in front of the posterior edge of the palate; it is thus shortened posteriorly.

The following are some of the deductions drawn from the investigations, full details of which are given:—The form of the inferior turbinate varies with the angle at its line of attachment, so that the originally simple rolled form (best retained in the negro) becomes gradually more vertical, flatter, and segment-shaped (Indian). From the negro to the European the ethmoid undergoes a diminution in its frontal dimensions; strangely, the development of cells (bullous form) in the middle turbinate, on the other hand, is found oftenest in the European. Increase in size of the bulla ethmoidalis usually goes hand in hand with that of the uncinate process; the negro again presents, on an average, the greatest development, the European the least. The larger the bulla, especially in its anterior part, the further forward extends the uncinate process, until it may even pass in front of the vertical edge of the middle turbinate. The inclination of the middle turbinate downwards and outwards becomes the more marked the less the parts of the ethmoid in the middle meatus are developed (this is best seen in the European).

These considerations are of practical importance in the following respects:—

1. In a recent discussion an argument adduced against the etiological connection of genuine ozæna and intranasal atrophy was that ozæna did not occur in the negro, although he had a very wide nose. The author finds, however, that the nose in the negro is not unusually wide when compared with that of the European.
2. There is a striking increase of cavities in the middle turbinate of the European, although the volume of the other ethmoidal spaces seems diminished when compared with the condition existing in the negro.
3. In Europeans, who apparently have the sense of smell least developed, the olfactory fissure is widest, owing to the inclination of the middle turbinate outwards.

A. B. Kelly.

Bönninghaus, G. (Breslau).—*The Resection of the Facial and the Nasal Wall of the Antrum, with Invagination of the Nasal Mucous Membrane into the Cavity, for the Cure of Obstinate Antral Empyema.* "Archiv für Laryngol. und Rhinol.," Band VI., Heft 2.

Too little attention is paid to the fact that antral suppuration after a short period of treatment may become latent, but at a later date may again manifest itself. Thus, cases are frequently reported as cured before sufficient time has been allowed to elapse to test the permanency of the result.

A large number of patients with antral suppuration remain uncured for years, in spite of treatment. The author gives a *résumé* of the methods proposed by Küster, Jansen, etc., of treating these obstinate cases through a large aperture in the facial wall. A wide opening being established so that the cavity can be inspected, the lining membrane must be treated according to the changes it presents by localized or general curetting. Excepting for some days immediately after

the operation, the author does not approve of packing the cavity with gauze, owing to the irritation it causes. He also dispenses with drainage tubes and obturators, and introduces only a plug of gauze to prevent closure of the artificial opening.

The prognosis after such operations will depend on whether the affection of the mucous membrane was circumscribed and the treatment confined to the area involved; or, the entire lining membrane having undergone change, its thorough removal was required. Cases of the latter class are very difficult to cure. The new lining membrane consists of connective tissue matrix derived from granulations and epithelium which passes into the cavity from the neighbouring mucous membrane. Normal cicatrization takes place only when these two layers are developed *pari passu*. If the epithelium, owing to its limited line of origin, is slow in advancing, the granulations become exuberant. The growth of the epithelium must therefore be hastened by giving it a more extended line of origin, and this can be accomplished by resecting a large part of the inner wall of the cavity, and invaginating the nasal mucous membrane which covered the resected wall. The mucous membrane in the vestibule of the mouth also plays a part in this process of invagination.

The method of operating is as follows:—Carious teeth underlying the antrum having been extracted and their alveoli scraped, an incision is made down to the bone along the highest part of the vestibule of the mouth from opposite the second incisor to the wisdom tooth. The tissues are raised from the bone from close to the pyriform aperture to the zygomatic process, and upwards to near the infra-orbital foramen. The bleeding having been checked, sufficient of the anterior wall of the antrum is removed to allow of a thorough examination of the cavity. If the mucous membrane is but slightly changed, carious spots are sought for, especially on the floor, scraped, and the operation is complete. On the other hand, if the whole mucous membrane is transformed so that it cannot be restored to a normal condition, the bony opening is enlarged, and the entire lining membrane scraped out. At this stage the author proceeds to carry out his own modification. Having distinguished by palpation the upper membranous from the lower rigid portion of the inner wall of the antrum, and having made out their line of union, which corresponds with the attachment of the inferior turbinate, the bony part below this line is carefully gouged away so as not to injure the nasal mucous membrane. Through the opening thus established the nasal mucous membrane is separated from the bone in all directions, and the latter removed with forceps. The upper part of the inner wall is then treated, the thin bone being separated from the nasal mucosa; the antero-superior angle is preserved, however, because of the presence of the lachrymal canal. The narrow horizontal bony ridge of the inferior turbinate now alone remains, and as much as possible of it is also removed after detachment of the mucous membrane. The separated nasal mucous membrane, which now forms the sole partition between the nose and antrum, is pushed from the nose into the cavity, and kept in position by strips of iodoform gauze. The nose is left free. The wound in the mouth is packed. The gauze is removed in four or five days, and by that time the mucous membrane in the antrum has become adherent for the most part. The after treatment consists in cleaning out the cavity by blowing several times daily while the nose is closed and the cheek raised, and by washing morning and night; in the intervals a piece of gauze is kept in the wound. The cavity can be inspected for months, either directly or by means of the laryngeal mirror.

Three cases are reported in which the author operated according to his method.

A. B. Kelly.

Carruthers, S. W.—*Removal of a Foreign Body from the Nose after Twenty-three Years.* "Brit. Med. Journ.," Feb. 12, 1898.

IN this case the foreign body or stone had lain in the nasal (right) passage for twenty-three years, during which time the patient had suffered from nasal obstruction, and from frequent attacks of epistaxis. The author removed the foreign body by means of a pair of forceps. He mentions one case in which the foreign body remained in the nose for twenty-seven years, and another for forty years.

W. Milligan.

Chambers, G.—*A Case of Acute Glossitis.* "Canadian Practitioner," Jan., 1896.

THE patient, a young man, had inflammation of the tongue twelve years ago, which started in the papillæ. The tongue became black on the surface. This seems like a recurrence of the old disease. The hypertrophied papillæ extend to the base of the tongue on one side, and halfway back on the other. Several spots are black with ecchymosis. The doctor is under the impression that it is a case of ichthyosis.

Price Brown.

Douglas, Alex.—*Empyema of the Antrum in a Child Three Weeks Old.* "Brit. Med. Journ.," Feb. 5, 1898.

THE patient, a child, aged three weeks, presented a most unusual appearance, the right cheek being swollen, the right eyeball protruded, the eyelids and the conjunctivæ congested. The right side of the roof of the mouth was bulging, and the superior maxillary bone appeared prominent in every direction. Pressure over the cheek caused pus to exude from the right nostril. A diagnosis of antral empyema was made. The antrum was opened and washed out. The case did well, complete recovery taking place.

W. Milligan.

Garel.—*Rare Fractures of the Nose. Necrosis and Elimination of the Inferior Turbinate.* "Ann. des Mal. de l'Oreille," Oct., 1897.

IT would appear that fractures involving the inferior turbinate are of great rarity. Two cases are here reported, occurring in children of ten and four respectively. In both cases the nasal process of the superior maxilla was the point injured, and presumably fractured. In the first case fracture of that process was evident, and sequestration occurred. Two weeks after the injury the greater part of the inferior turbinate also came away as a sequestrum. In the second case there was history of considerable swelling, but fracture of the nasal process was not actually made out. The injury was followed by purulent rhinitis, and not until two years had passed was the cause of this condition found to depend on the presence of a necrosed and sequestered inferior turbinate.

The author asks the question: Did the trauma produce fracture of the attachment of the turbinate, or was the necrosis secondary to the suppurating hæmatoma?

Ernest Waggett.

Gaudier (Lille).—*Case of Tubercular Antral Empyema; Opening by Canine Fossa; Cure.* "Ann. des Mal. de l'Oreille," No. 44, 1897.

LEFT-SIDED empyema of Highmore's antrum; opening from the alveolus; daily syringing; no result. Proof of tubercle bacillus in the pus; inoculation positive. Nose intact, only small polypi. Lung condition negative. Thereafter daily application of a two per cent. iodoform in glycerine and iodoform powder; likewise no result. Thereafter wide opening from the canine fossa. Curetting of pieces of bone and granulations. Tampon. Recovery.

Lichtwitz.—*Acute Osteomyelitis of the Superior Maxilla simulating so-called "Classical" Empyema of the Antrum.* "Arch. Intern. de Lar., Otol., et Rhinol.," July and August, 1897.

THE author maintains that the so-called "classical" external symptoms of empyema of the antrum—that is to say, suborbital pain, swelling and redness of the cheek, and prominence of the antrum—are by no means characteristic of antral suppuration. Indeed, in all such cases which he has met with there has proved to be epithelioma, dental or alveolar cysts, gumma, or osteomyelitis.

The present case is that of a man of twenty-nine, who received a blow on the left side of the face two years previously. Suppuration occurred and perpetually recurred during the two years, accompanied by redness and swelling of the cheek. Pus discharged from the alveolar openings, and finally pus escaped into the nose and post-nasal space. An operation was performed, and the whole of the alveolus was found necrosed. Small openings were found leading into the inferior meatus and the post-nasal space. The deep cavity produced by removal of the sequestrum was roofed merely by the mucous membrane of the antrum, and when opened this cavity was found quite free from pus. References to literature bearing on this point are given.

Ernest Waggett.

Thorburn, J. D.—*Rhinolith.* "Canadian Practitioner," Jan., 1896.

SUPPOSED to have been caused by point of knife blade from some previous operation. Weight, one hundred and twenty-two grains.

Price Brown.

LARYNX.

Chiari, O. (Vienna).—*On Angiomata of the Vocal Cords.* "Archiv für Laryngol. und Rhinol.," Band V.

IF growths with a fibrous, cellular, sarcomatous, or cancerous matrix and a very abundant supply of blood vessels be regarded as angiomas, then these are of common occurrence in the larynx. True angiomas, to which the author confines his attention, are, however, very rare. He briefly refers to the cases that have been reported as such, and shows that a considerable proportion of them were merely very vascular papillomas or fibromas.

He reports two cases of his own. Case 1: a man, aged twenty-eight, complained of discomfort in the throat. Chronic pharyngeal catarrh was present, and by chance a round bluish nodule as large as a hemp seed was found on the edge of the right vocal cord about its middle. The laryngeal mucous membrane was very red. With forceps a small membrane was removed, and this was followed by bleeding quite out of proportion to the insignificance of the wound. In place of the nodule a small depression was now found, and immediately before and below this another small bluish projection was observed and subsequently removed. Unfortunately the two small membranes were lost, so that varices could be diagnosed only from the hæmorrhage and the depression following the operation.

In his second case there is complete histological proof of its nature. The growth was found in a larynx which the author had received for examination from Prof. Kundrat. A hemispherical, bluish nodule, about one millimètre in diameter, was observed near the middle of the right vocal cord, somewhat below its free edge.

A series of vertical sections from before backwards was prepared, and a minute description of their microscopic appearances is given. The nodule proved to be a

vascular coil embedded in loose connective tissue between the ligamentum vocale and the epithelium. At each end of the nodule there was a single vessel, probably the same, which by its winding and dilatation formed the tumour.

The author regarded the nodule as a varix. At a demonstration of the sections, however, Billroth expressed the opinion that it was a cavernous tumour, because the mass, which consisted of coagulated blood, was traversed by trabeculae; besides, the view that a varix may develop in the larynx was to be accepted with great reserve, cavernous tumours, on the other hand, being frequently observed in this situation. Chiari maintains that the growth was a varix, because at its anterior and posterior end a single vessel took part in its formation; also because of the thinness of the walls, which in many places were separated from one another by loose connective tissue. Finally, he shows that the structure of the nodule closely resembles that of a hæmorrhoid.

The cause of this varicose condition is doubtful. In the larynx from which the nodule was obtained the left vocal cord had been paralyzed for years in consequence of compression of the recurrent. The right cord presented a general increase and dilatation of the vessels, relaxation of the mucous membrane, and abundant infiltration of round cells. There was consequently chronic hyperæmia; but this occurs so frequently without any varicose formation that it is necessary to look for the cause elsewhere. Other writers have certainly pointed out that with angiomas of the vocal cords the latter were usually hyperæmic, and that chronic catarrh was also present; but whether this hyperæmia was the consequence or cause of the angiomas must remain undetermined.

From what has been written regarding angiomas we gather that they are rarely seen in the larynx; when occurring here the vocal cords are the favourite site, then the false cords. The patients are usually adult males. Nothing certain is known as to the etiology. Most frequently they occur as cavernous tumours, more rarely as simple angiomas, and quite exceptionally as tumour-like varices. They appear to develop slowly, and they are usually associated with hyperæmia and chronic catarrh of the larynx. The cavernous tumours, as a rule, look like bramble berries, and are dark red or almost black. The simple angioma appears as a smooth projection, which on closer inspection is found to be made up of fine vessels. The varix forms a bluish nodule. As long as the angioma is small it causes no trouble, hoarseness setting in only when it attains a considerable size. Very vascular fibromas, papillomas, and myxomas, from their dark bluish red colour, may closely resemble angiomas; even the histological diagnosis is sometimes difficult.

The treatment consists in the removal of the growth; but as an operation by the usual means is often followed by profuse hæmorrhage, it is advisable to employ only galvano-caustic instruments. *A. B. Kelly.*

Crouzillac (Toulouse).—*A Case of Reflex Aphonia of Nasal Origin in Hysteria.* "Ann. des Mal. de l'Oreille," No. 12, 1897.

HYSTERICAL patient, with aphonia. Larynx very anæmic; otherwise normal. In the right nostril on the posterior end of the inferior turbinate a broad sessile tumour. On pressure with a probe the voice became clearer, and after cocaine quite clear. The tumour was destroyed with the cautery, and lasting return of the voice resulted.

Donelan, James.—*The Guaiacol Treatment of Laryngeal Tuberculosis, especially by Submucous Injections.* "Lancet," Dec. 25, 1897.

THE larynx is thoroughly cleansed by antiseptic sprays and by the use of a mixture of guaiacol and paroline. The larynx is then cocaineized, and under the guidance of the laryngeal mirror an injection of one minim of pure guaiacol is made into the

affected part of the larynx. This injection is made with a specially designed laryngeal syringe, which is illustrated in the original article. *St Clair Thomson.*

Etrévant.—*The Median Osteotomy of Hyoid Bone and Transhyoid Pharyngotomy.* "Gaz. des Hôpit.," Sept. 25, 1897.

In a critical review the author advocates the proceeding of Vallas as doubtless preferable to other proceedings of opening the pharynx. It has the advantages of rarity of complications after operation—hæmorrhage, phlegmon, and pneumonia. In eight cases Vallas has had eight complete successes. It is indicated (1) in cases of foreign bodies lodged in the inferior part of the pharynx or superior part of the œsophagus; (2) in cases of tumour of the epiglottis; (3) for the cicatricial stenosis of the pharynx (inferior part); (4) for tumours of the tongue and the tonsil.

A. Cartaz.

Lacour, René.—*Subhyoideal Pharyngotomy.* "Thèse de Paris," 1897.

AFTER an elaborate and critical review of various operative proceedings, Lacour describes with great detail the technique of subhyoid pharyngotomy. That operation must not be attempted before preliminary tracheotomy. It is very convenient in cases of foreign bodies, and in tumours of the larynx and pharynx. According to the author it is preferable to the transhyoideal pharyngotomy advocated by Vallas, except in cases of tumours of the root of the tongue. Forty cases, with ten deaths, are referred to.

A. Cartaz.

Lichtwitz and Sabrazes.—*Orthoform.* "Le Bull. Méd.," Nov. 21, 1897.

THE authors have experimented with *orthoform* in cases which had dysphagia as a prominent symptom, notably laryngeal tuberculosis and laryngeal cancer, and likewise after removal of the tonsils by means of the galvano-cautery snare. This drug is a light, dirty yellow powder, slightly soluble in water, is easily dissolved in glycerine or water acidulated with hydrochloric, nitric, or acetic acid. It is feebly antiseptic, and perfectly harmless. And what is of the greatest importance, it gives immunity from pain for from twenty-four to forty-eight hours, the latter time being obtained more easily at subsequent as contrasted with primary applications. The reason of the long duration of anæsthesia appears to be its insolubility in the juices of the body. From this one learns that where there is any constant movement of or passage over the part frequent applications are usually required.

R. Lake.

Maljutin, E. N. (Moscow).—*The Cultivation of the Voice by Means of Tuning-Forks, and the Application of this Method to the Cure of Paresis of the Vocal Cords.* "Archiv für Laryngol. und Rhinol.," Band VI., Heft 2.

If a sounding tuning-fork is held in the hand the vibrations may be communicated not only to the fingers, but to the muscles of the upper arm and the shoulder, and in a less degree to the throat, head, and chest. A note will, therefore, be more easily sung if at the same time we hold a tuning-fork of corresponding pitch. The vibrations of the vocal cords by the exercise of the will coincide with the vibrations of the tuning-fork, and the tone will be more distinct and less effort will be required in its production. By means of tuning-forks the author succeeded in producing notes which previously he had lacked.

He also experimented on others, especially on those who had never learned to sing. After a little practice with the tuning-fork they were able to produce unaided the same note. In like manner, trained singers learned to produce notes with greater ease and resonance.

The author then tried his method in the following case of hysterical aphonia. A girl, aged fifteen, had been perfectly voiceless for two and a-half years. Massage, hypnotism, and a number of drugs had been tried, and she had been in

a hospital for three months, where she was treated with baths and electricity, but without success. All other treatment being suspended, vibrating tuning-forks were placed upon the thyroid cartilage while the patient tried to sing the corresponding notes. One sitting took place daily, lasting twenty minutes, during which a series of tuning-forks, from E to E², were used. On the third day sounds were produced for the first time; henceforward only one tuning-fork was employed. On the eighth day the tones were more distinct, and the patient could say some words. On the following morning she was again aphonic, but under the action of the tuning-fork the voice soon returned and was stronger. She was able to read next day, and since then there has been no aphonia. While the above treatment was being carried out a daily laryngoscopic examination was made. During the first few days the right vocal cord gradually began to move and to approach the middle line. After the fifth sitting the left cord also moved. In a moment the cords met. The girl is still unable to raise or lower her voice, and speaks in the tone of the tuning-fork with which she last practised.

The author attributes these results to the mechanical action of the tuning-forks on the vocal cords. A possible psychical effect cannot, of course, be denied.

A. B. Kelly.

Vacher.—*A very Simple and Practical Method of Preventing Dimming of Laryngeal Mirrors.* "Ann. des Mal. de l'Oreille," etc., Sept., 1897.

THE author objects to the soap method on the score of sepsis, and finds that an equally good result is obtained by using merely a wet mirror. The essential point is to remove all traces of grease from the glass with a one per cent. solution of bicarbonate of soda. When this has been done by simply rinsing or rubbing with wool soaked in the solution, a thin uniform film of fluid will adhere to the surface. A mirror so treated remains bright during a continuous examination of the larynx lasting five minutes. Although he keeps his instruments standing in one or two per thousand cyanide of mercury solution, he finds that mirrors treated in this way last very much longer than when heat is employed.

Ernest Waggett.

Walker, Ernest (New York).—*The Use of Iodoform in Suppurative Cervical Adenitis, Sinuses, etc., with a Report of Six Cases.* "Medical News," August 14, 1897.

THE author has found an ointment composed of vaseline, with ten per cent. iodoform, of great value in the after treatment of suppurating glands of the neck, even in quite young children, no evil effects having been experienced from the drug, and the healing process being much more rapid than by other methods of treatment. He has had equal success with it in the treatment of abscesses and sinuses in various other parts of the body.

StGeorge Reid.

Wullstein.—*On Foreign Bodies in the Air Passages.* "Münch. Med. Woch.," Medical Society of Halle, July, 1897.

AFTER describing three clinical histories with two *post-mortem* reports, recommends tracheotomy in all cases in which the foreign body has passed beneath the larynx. Special indications for tracheotomy should not be waited for, as the prognosis becomes worse the longer the foreign body remains in the air passage.

Herr Meins referred to the clinical history of a patient who had aspirated a bone. Empyema of the pleura and lung abscess resulted. After two years the foreign body was coughed up, and patient recovered.

Yonge, E. S.—*The Local Treatment of Painful Ulcerations by Orthoform, with Special Reference to the Upper Air Passages.* "Brit. Med. Journ.," Feb. 5, 1898.

A SHORT description of the chemical composition of orthoform is first given,

and a list of the most suitable preparations appended. (1) The crude powder; (2) pastilles; (3) a saturated solution of orthoform in collodion; (4) a spirituous spray; (5) a ten per cent. ointment; (6) a ten per cent. aqueous solution of the hydrochloride.

In the author's opinion neither the free orthoform (basis powder) nor the hydrochloride anæsthetise sufficiently to allow of surgical action upon an unbroken surface. When, however, it is applied to painful ulcerating surfaces it appears to exercise an analgesic and anæsthetic influence. It also appears to be non-toxic.

A short report of cases treated with this drug is appended. *W. Milligan.*

ŒSOPHAGUS.

Bingham, G. A.—*Removal of Foreign Body from the Œsophagus.* "Canadian Med. Review," Dec., 1897.

FIVE days before examination a child had swallowed a button three-quarters of an inch across. Finding it impossible to remove it *per vias naturales*, an incision was made on the left side from the thyroid cartilage down to the sterno-clavicular joint. In dissecting, the inferior thyroid artery gave the most difficulty. The button was removed through the lower end of the wound. No sutures were inserted, but the wound lightly packed with iodoform gauze. Stomach tube passed now and then to prevent stricture. Good recovery. *Price Brown.*

E A R.

Anderson, H. B.—*Cerebral Abscess.* "Canadian Med. Review," Dec., 1897.

THE author had seen within a short time on the *post-mortem* table five cases of abscess of the brain, four of which resulted from ear disease. In some of these the only diagnosis was made at the *post-mortem*. The sequelæ observed were general septicæmia from streptococcus infection, abscess of the cerebellum, abscess of the temporo-sphenoidal lobe, thrombosis of the cavernous sinus, and extension into both orbits, with suppuration. *Price Brown.*

Colman, W. S.—*Further Remarks on "Colour-Hearing."* "Lancet," Jan. 1, 1898.

ATTENTION has been called by Mr. Francis Galton to the great variations in the exact manner in which mental processes are carried out in different individuals. In his fascinating book, "Enquiries into Human Faculty," he has given many illustrations of this individuality. One of the most remarkable of these is the faculty possessed by a considerable percentage of persons of experiencing a sensation of colour in association with certain sounds, the colour seen being definite and invariable for the same sound. This faculty had been observed by many earlier writers, and had been ascribed to morbid brain conditions. The writer's attention was called independently to these curious conditions, and he had the opportunity of investigating a number of cases, the result of which appeared in the article of March 31st and April 7th, 1894. It was found that the cases fall into two groups. In the first there is a crude colour sensation, often very beautiful, associated with certain sounds such as each of the vowel sounds, musical notes, or particular

musical instruments. The appearance is usually that of a transparent coloured film similar to a rainbow in front of the observer, but not obscuring objects. In the second group there are colour sensations whenever letters or written words (symbols of sound) were spoken or thought of, so that when a word is uttered the subject visualizes the letters, each having a distinctive tint. He has since that time been able to investigate a number of additional cases. Most of them were of the same character as those previously described, and need not therefore be again described. Others which illustrate fresh points will be described later.

A study of these additional cases entirely confirms the opinions previously expressed as to the nature of the phenomena—viz., that they are “associated sensations” analogous to the cutaneous sensation of shivering in certain parts of the body (varying in different individuals) which is experienced at the sight or thought of an accident or at the sound of the squeak of a slate-pencil. The subjects are more frequently males than females. The author met with about the same proportion among highly educated individuals, and those who have had an ordinary board school education. It is difficult to obtain any light as to the origin of the phenomena. They nearly always date back to the subjects’ early childhood. It has been suggested that they have been due to the child learning his letters from a coloured alphabet, but this is certainly not so in some cases. In one case the letters in the alphabet used for teaching were all pink, and none of the colours excited by the pronunciation of words were pink. In another, all the members of one family (who possess this faculty) were taught from the same coloured alphabet, but their colour experiences had nothing in common. Even where the faculty is inherited, mother and daughter associate totally different colours with the same sound.

The tints excited are very definite and characteristic, each for its own sound. They do not vary as time goes on. In one of the cases the tints were exactly the same when recorded after an interval of ten years. The colours are scarcely ever the same in two individuals. This is very clearly shown in the coloured diagrams which accompany this paper. The tints given are only approximate. If it were possible to reproduce the exact shade still greater variety would be evident. The first diagram shows the tint excited by the spoken vowel sounds in twenty-one individuals, while the second shows the coloured letters which are visualized by five subjects respectively, when they think of a word. It will be seen at once that the same sound is associated with a different colour in the case of each person, and the phenomenon cannot therefore depend on any physical relationship between sound and colour as has been supposed. The process is an individual and psychical one.

For further particulars of this interesting subject we must refer our readers to the original paper. It is illustrated by a coloured plate. *St Clair Thomson.*

Etrévant.—*On Monaural Diplacusis.* “Ann. des Mal. de l’Oreille,” Nov., 1897.

BINAURAL diplacusis is a phenomenon not infrequently observed, but as a monaural symptom diplacusis is exceedingly rare, and the author is unable to quote more than three recorded cases (Gradenigo, two; Bressler, one). He has himself met with two examples in Lannois’ clinic.

Case 1. A woman of fifty-seven, giving a history of earache on the right side in childhood, and of otorrhœa on the same side at the age of fifty. After influenza, three years ago, deafness increased and the phenomena to be described developed.

(1) Sounds repeated at intervals of one second seemed to be separated by not more than a quarter of a second.

(2) A sound of the human voice (her own or another’s) was heard as three

different sounds, the additional sounds being in a lower key than the original. These phenomena were constant. Rapid speech was heard as a confused, and as it were, musical sound. Hearing proved to be entirely lost on the right side, while the left membrana tympani was thickened and depressed. Loud tinnitus ("falling water") was present.

After six catheterizations hearing was improved and the triple resonance less marked.

Case 2. A woman, with complete loss of hearing on the right side. Loud tinnitus constant and pulsating. A single note of the human voice was heard as four or five notes—some higher, some lower in tone than the original. There was no regularity in the gradation of the sounds perceived. Evidences of advanced sclerosis were present in either ear. This dysharmonic polyacusis ceased after repeated catheterization, which also improved the hearing.

These phenomena may, perhaps, depend upon the presence of areas of diverse tension in the altered tympanic membrane.

Ernest Waggett.

Goldstein, M.A.—*Bilateral Syphilitic Ulceration of the Auricle.* "The Laryngoscope," Jan., 1898.

PRIMARY syphilis of the auricles is a rarity; secondary syphilitic affections of the auricle are, however, frequently met with, especially as an extension to this locality from diseased areas upon the face and neck. Cases of tertiary syphilis of the auricle have been recorded by several observers, especially when due to extension of ulceration from adjoining parts; but the existence of symmetrical tertiary lesions upon the auricles, without any other syphilitic lesion or eruption, has not been previously recorded. In this case the patient was a male, aged twenty-five, who, about seven weeks before applying for treatment, had noticed several small nodular masses making their appearance upon the right auricle. The nodules gradually increased in size, and covered a considerable portion of the concha and lobule. Two weeks later similar nodules appeared upon the left auricle. The infiltration was succeeded by softening and ulceration. After removal of all scabs, three deep, well-defined, kidney-shaped ulcers, with red bleeding surfaces, were found upon the right auricle, two similar ulcers upon the left.

Six years previously the patient had contracted syphilis. Rapid reduction of the ulcerations followed the administration of fifteen-drop doses of a saturated aqueous solution of iodide of potassium. A short bibliography relating to cases of syphilitic lesions of the auricle accompanies this paper.

W. Milligan.

Gradenigo (Turin).—*Intramuscular Iodine Injection by Durante's Method.* "Monats. für Ohrenheilk.," No. 10, 1897.

SECRETION becomes more fluid; foetus less; sometimes vanishes; no bad effects; injection is painful. At the same time, favourable influence on existing ear affections.

Grunert, K.—*On Extradural Abscess proceeding from the Ear.* "Münchener Med. Woch."

GRUNERT discussed the pathological anatomy and clinical history of extradural abscess from the material in Schwartz's clinic. In describing the pathogenesis he emphasized the predisposition to extradural abscess in acute forms of otitis rather than by chronic forms; further, the frequency of external pathways (small fistulæ arranged like pearl strings, with pneumatic bone cells clothed with a purulent infiltrated mucous membrane) which can be followed from the middle ear to the extradural collection of pus. Extradural abscess is especially apt to form in those cases of acute otitis which are characterized by an inclination to a rapid

course, and which usually depend on infection by the pneumococcus (Zaufal and Leutert). Further on he describes the situation, extension of the extradural collection of pus, the condition of the affected dura mater, and the contents of the abscess.

In the description of the so-called deep extradural abscesses which are situated on the pyramid of the os petrosum, he described, besides the known ways of origin, a new one—the carotid canal. He demonstrated a temporal bone which showed the anatomical connections. In the clinical part of his paper, Grunert spoke on the uncertainty of diagnosis, which does not exceed the value of a probable diagnosis. As a rule, at least in cases of chronic otitis, extradural abscess is found during the operative procedure of the mastoid operation, by the discovery of an external pathway of the kind described.

He referred to all the signs which have been thought to be of value in the diagnosis of extradural abscess. An extradural abscess is not easily overlooked in the cases of chronic otitis, when the ear condition indicates the undertaking of opening the mastoid, in which, as a rule, external sinus is met with. More unfavourable are the conditions in acute cases where there is delay. Such delay often becomes fatal for the patients. Among the appearances which must give rise to the suspicion of the existence of an extradural abscess, he considers of importance the incongruence of the subjective symptoms and the objective ear condition—severe pain in the ear or on one side of the head, with a scarcely hyperæmic membrane, and no appearances of inflammation on the mastoid process, etc.—far the most important symptom; and states that those physicians who can examine the ear, in consequence of this incongruence are inclined to consider such patients as malingerers. Further, he states that extradural abscesses following acute otitis are often mistaken for so-called occipital neuralgia. Further, he describes the treatment, which, on account of the nature of the disease, can only be operative; that the prognosis of operative treatment of extradural abscess is very favourable when not complicated with other intracranial complications of otitis, confirmed by communication of the good results of operative treatment from Schwartze's clinic.

Lake, R.—*Contribution to the Surgical Anatomy of the Tympanic Antrum.*
"Lancet," Nov. 13, 1897.

THOSE who have frequent occasion to open the tympanic antrum must constantly be forcibly reminded of its irregular position, especially as affects its relations to the lateral sinus; those with the tympanum itself, and also with the facial nerve, being fairly constant, and only affected by the size of the antrum, whether that size be the result of disease or not. The results of careful measurements of twenty-eight temporal bones not affected with disease has enabled the author to form a series of sketches, each typical of a certain number of sections. The sections were cut horizontally, passing through the suprameatal fossa. Each section has been carefully traced, and these tracings compared by being superimposed. In this way groups were formed, and a typical section was drawn from each group. It was found that these might be arranged in three main divisions—viz., (1) those in which the groove for the sinus lateralis must be opened and the sinus exposed during the mastoid operation; (2) those cases in which the antrum is operated on—the probabilities are that the sinus will be exposed, yet it may escape; and (3) those cases in which the sinus will not come into view during the operation.

Another conclusion is that one might expect to expose the sinus about once in six operations.

The act alone of exploring the sinus is one which, provided antiseptic precautions are taken, seems to be entirely without danger; and even where the sinus

itself is opened careful plugging with iodoform gauze controls the bleeding, and in no case has any ill effect been recorded, though the same cannot be said for puncture of the sinus with the drill. The use of the electric or dental burr is likely to reduce the number of times the sinus is exposed, as one can work with a straighter—that is, a less funnel-shaped—wound in the bone; and it is usually due to this alone that such accidents occur if the operator is working with a knowledge of the general position of the cavity. Continuing the relative measurements as far as one can from these sections, maintaining the original reservation that such a number can only give approximate accuracy, one finds the average depth of the attic to be a little over three-tenths of an inch, taken in a direct line from the point of election, and the distance of the nearest point of the sinus 0.48 inch on an average, with 0.2 inch as a minimum and 0.7 inch as a maximum; this last measurement demonstrates clearly that exposing the sinus by a continuation of a previous antrum operation is, as a rule, not only the proper surgical procedure, but the quickest route to the sinus, as the distance of the sinus is often less than a quarter of an inch from the suprameatal fossa.

The results are made more apparent by reference to the diagrams which illustrate this communication.

St Clair Thomson.

Ryerson, G. S.—*Cerebral Abscess*. "Canadian Med. Review," Dec., 1897.

The author reports two cases of cerebral abscess following middle ear disease. (1) A young lady, aged eighteen years, had suffered from chronic discharge from the ear for fifteen years. It then suddenly ceased. Three months later she consulted him in reference to severe pain in the head. There was swelling and redness of the external ear, with slight foetid discharge; also caries of external auditory process, but no marked tenderness of the mastoid. There were not indications enough for trephining. Patient gradually fell into a comatose condition and died.

(2) A child. Had been in failing health for three months. Was then called to attend it for acute inflammation of the middle ear. Discharge not profuse. Tenderness over mastoid not marked. Slight outward squint. Ophthalmoscopic examination showed double optic neuritis.

In this case, too, indications were not sufficient to justify surgical interference. The patient died. The doctor believed that treatment in each case was too late to be of any avail.

Price Brown.

REVIEW.

Gordon, H. Laing.—*Masters of Medicine. Sir James Young Simpson and Chloroform*. (T. Fisher Unwin, Paternoster Square, London. 3s. 6d.)

THIS the third volume of the series, is fully equal in interest to its predecessors, though, not unnaturally, as we come nearer to our own time, some of that romance indissolubly attached to all things of more remote periods and times more dissimilar to our own is wanting. Against this questionable loss Dr. Gordon presents us with a continuous narrative with no speculative periods. A narrative full of interest is the

life of this great man ; his early promise, even from his birth (for we are told that he was the seventh son), a portent of success. Truly this seventh son was one of whom not only his family were proud, but his country revered, and who won by steadfastness of purpose and uprightness of action the admiration of the whole civilized world. Doubtless this was largely enhanced by his discovery of the anæsthetic powers of chloroform, but this very discovery was but the result of his dogged determination, a direct result of his character.

The discovery of chloroform anæsthesia occupies but a tithe of the book, and this includes a brief, concise, but clear history of anæsthesia. It is short, but, great though its importance it truly forms but a striking epoch in the busy life. Of the greatest interest is the chapter on the fight for anæsthesia, and his wit was no less useful than his learning in this fight of prejudice, ignorance, and bigotry against a new and glorious fact. Witness his famous parody on the Dublin letter, p. 121.

His antiquarian researches, his kindness, generosity, and hospitality are all faithfully portrayed. It was his custom, we are told, to go his round without a list of patients, trusting only to his memory. In even a brief review it would be obviously wrong not to allude to that great achievement of his, the elevation of the practice of midwifery to a level with that of its sister arts and sciences. He worked for this, and he saw his point gained. What greater reward could such a man desire ?

Finally, we only wish to compliment the author on his production, and advise our readers to secure this also for early perusal.

NOTICE.

AN INTERNATIONAL DIRECTORY OF LARYNGOLOGISTS AND OTOLOGISTS.

THE Managing Sub-Editor will be glad to receive the names and addresses of all Laryngologists, Rhinologists, and Otologists for this Directory.

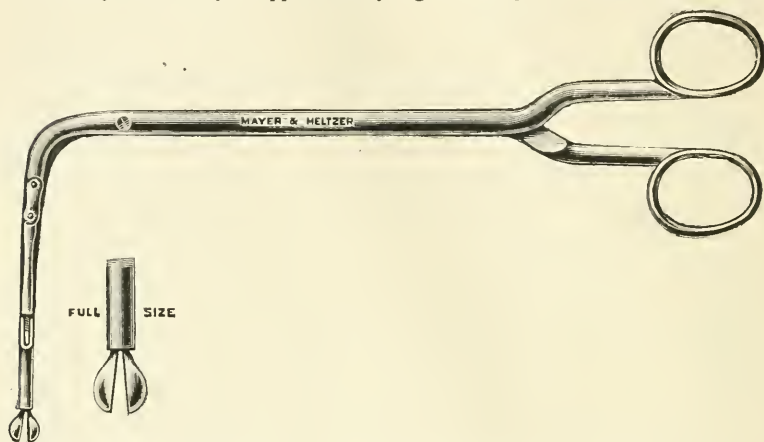
The Directory will be published June, 1898. It will contain the names and addresses of all the specialists obtainable (already several thousand).

Will be published under the auspices of the JOURNAL. Price and date of publication will be issued later.

Address : Managing Sub-Editor, care of REBMAN & CO., 11, Adam Street, London, W.C., England.

NEW INSTRUMENT.

Dr. W. McNEILL WHISTLER brings to our notice a laryngeal forceps designed by him, which he showed some time since at a meeting of the British Laryngological, Rhinological, and Otological Association. The terminal extremity is rotatory, and so may be applied at any angle to the growth requiring removal.



The proximal end or handle of the forceps works always in a *vertical* direction, this being a very distinct advantage over the ordinary lateral forceps in operating upon growths with central attachment. The shaft of the instrument, playing through a canula, is readily deflected so as not to obstruct the view in operating.

The accompanying woodcut illustrates the action of the forceps, the makers of which are Messrs. Mayer & Meltzer, Great Portland Street, London.

THE

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY.

Original Articles are accepted by the Editors of this Journal on the condition that they have not previously been published elsewhere.

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THE SUPRATONSILLAR FOSSA AND ITS AFFECTIONS.

By DONALD ROSE PATERSON, M.D., M.R.C.P.

THE region of the fauces and palatal tonsil has had so much attention directed to it of recent years, and has been so thoroughly explored, that it is not a little surprising that the existence of an anatomical space of no little importance in relation to both structures should be almost entirely overlooked.

The apparent explanation of this is perhaps not far to seek. It has, of course, been known (though text-books afford us but little light on the point) that at the upper part of the tonsil, close to the anterior palatal arch, a small recess is frequently to be found; and, like other observers interested in throat work, I was content for a time to accept the prevailing view, and regard it as an enlarged tonsillar crypt, out of which cheesy material could occasionally be turned.

For some years I have been in the habit of examining it more or less regularly, and I have been long convinced, from the frequency with which it is to be noted, and the occasional size and relations of the space, that this view required modification; but it was not until two years ago, after I had come across one of the cases described below, that I went into the matter more fully, and made out definitely that we had to deal with a space quite apart from the tonsil, and that it was not in any sense to be regarded as a crypt of that gland.

After collecting a number of observations on this space, made upon patients in the throat department of the Cardiff Infirmary, and in the *post-mortem* room, I made an extended search into literature dealing with the pharynx, without any result; and it was only on going into the subject from a developmental point of view that I found that this cavity had been described as an anatomical space by His as far back as 1885, and it is singular that the account of it in his work on embryology should

have remained ignored equally by writers on diseases of the throat and on general anatomy.

My colleague, Prof. Dixon, has informed me that His has now succeeded in getting his views accepted by anatomists, and the "Anatomische Nomenclatur," edited by His for the recent International Committee of Anatomists, contains a notice of it. It is with a view of drawing attention to the great importance of the recess from the clinical and pathological side that I venture now to give an account, taken from



FIG. 1.—Photograph of left faucial region; plica triangularis covering anterior aspect of tonsil; a dark straw is inserted in the supratonsillar fossa; immediately below it is the opening of a large crypt.

my own observations, of its anatomy and the affections to which it is liable.

If the tonsillar region of a child or young adult be inspected it will generally be found that the tonsils are fairly well marked, each gland, though embedded between the pillars of the fauces, being well circumscribed and readily differentiated from the surrounding structures. The openings of the various crypts are seen on the inner or superficial aspect, and towards the upper part these are usually larger, for a reason I shall refer to later.

If we carefully observe the anterior palatal arch (arcus glosso-palatinus) there may be seen a fold of mucous membrane arising from its free border and stretching backwards towards the tonsil, which it partially covers.

This fold, which possesses considerable importance, has, in well-marked instances, a triangular shape, and to it His has given the name *plica triangularis*. At its apex it may be seen to blend with the arch and become lost in the velum palati; the base disappears in the structures at the root of the tongue, whilst the free edge may extend over the tonsil for a variable distance, and even be closely adherent to the gland (Fig. 1). The enlarged tonsils of children frequently show it in a characteristic form,



FIG. 2.—Photograph of right supratonsillar fossa; plica held aside by a small piece of wood.

where it covers the anterior or buccal surface and gives to it a smooth appearance, in marked contrast to the uncovered part with its network of cryptic orifices. I shall have occasion to deal with its variations later, as they have an important bearing on our subject.

At the upper part of the tonsillar region—*interstitium interarcuarium* (His)—and immediately behind the plica, a probe suitably curved may be passed into a cavity which extends into the soft palate for a variable distance, and bears an important relation to the tonsil (Fig. 2). This space has been termed by His the *supratonsillar fossa*, a name appropriate enough, perhaps, to a majority of the cases, but not strictly applicable to

all. It is most undesirable to multiply names, but I cannot help thinking that the term *palatal recess* would be more accurate and free from objection, and at the same time in strict keeping with the designation of its analogue, the pharyngeal recess (fossa of Rosenmüller). But the former appellation has just received the imprimatur of representative anatomists and been adopted in the new nomenclature, so that the suggestion of any further title, however commendable, is scarcely to be justified.

Complete examination of the space cannot be carried out in the living subject, but sufficient may be made out to satisfy oneself that it is very different from a large or dilated crypt, and it is more than probable that the occasional presence of a wide crypt at the upper part has led to the confusion.

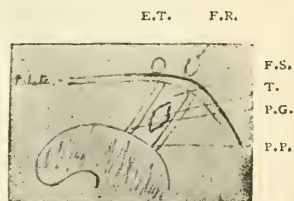
DEVELOPMENT OF THE FOSSA.

The anterior palatal arch—arcus palato-glossus—is derived from part of the second visceral fold of the embryo, and forms the division between the mouth proper and the pharynx. Behind it is the groove or hollow—sinus tonsillaris—in which the palatal tonsil develops, and this is part of the cleft between the second and third visceral arches.

The palate, starting as a bud from the upper jaw, grows backwards, crossing the second and third visceral arches with their enclosed cleft, and divides the parts in the foetal pharynx into an upper and lower series.¹ The following diagram, for which I have to thank my friend Prof. Dixon, was copied from a blackboard sketch drawn by Prof. His some years ago during his systematic course of lectures on embryology, and as it represents his views on the development of this part, I am glad to have the opportunity of reproducing it here (Fig. 3).

In the upper series—*i.e.*, above the palate—we have the Eustachian tube developed from the cleft between the first and second visceral arches, and the fossa of Rosenmüller from the cleft between the second and third. Below the soft palate the palatal tonsil is formed by the development of lymphoid tissue in the cleft between the second and third arches, and in the upper part of this space the remainder of the cleft unoccupied by tonsil constitutes the supratonsillar fossa. It will be observed that the second visceral cleft gives origin to the fossa of Rosenmüller (pharyngeal recess) above the palate, and to the fossa supratonsillaris (palatal recess) below the palate. Around both fossæ adenoid tissue is produced, and may develop to an extent which interferes with the capacity of each space.

Between the fourth and fifth month of foetal life the anterior palatal arch widens and forms the free edge of a triangular fold of mucous mem-



- E.T.—Eustachian Tube.
- F.R.—Fossa Rosenmüller.
- F.S.—Fossa Supratonsillaris.
- T.—Tonsil.
- P.G.—Arcus Palato-Glossus from second Visceral Arch.
- P.P.—Arcus Palato-Pharyngeus.

FIG. 3.—Condition of parts in adult.
(From a blackboard diagram of Prof. His.)

¹ "Anatomie Menschlicher Embryonen." Von Wilhelm His. (1885.) III. Zur Geschichte der Organe.

brane—plica triangularis—which projects behind over the groove—sinus tonsillaris—in which the palatal tonsil is developed.

According to Kölliker, the tonsil at the fifth month is a smooth sac, with fissure-like opening and several small cavities, the internal or median aspect of which looks like a valve, the latter being evidently the plica triangularis. Lymphoid tissue forms in the sinus or groove and almost completely fills it, constituting thereby the tonsil.

According to the degree in which this is effected and to the mode of arrangement of the plica, a number of variations are met with. But in nearly every instance there is left a small recess—the fossa supratonsillaris—at the upper part of the interstitium in relation to the apex of the tonsil and covered by the free edge of the plica.

SITUATION AND RELATION OF THE FOSSA.

These are influenced by two main considerations. (1) The disposition of the plica. (2) The development of the lymphoid tissue. It is

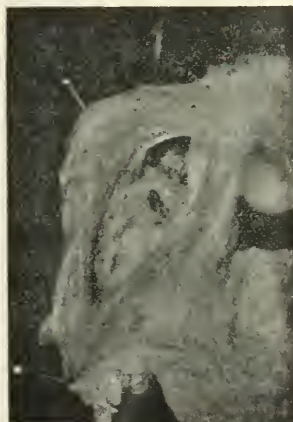


FIG. 4.—Photograph of right fossa with plica stretched and pulled forwards and upwards.

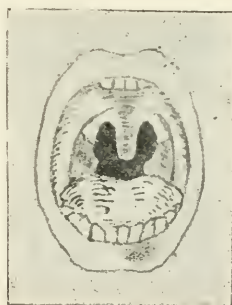


FIG. 5.—Sketch to show plica covering anterior surface of the tonsils in a child.

probable that the original depth of the second visceral cleft has likewise some influence on the ultimate extent of the recess.

If in a young cadaver the lower jaw be split and turned out, a good view may be had of both sides of the fauces, and the parts observed *in situ*. Not infrequently the opening into the fossa may be seen, although a more complete view is obtained by pulling aside the plica triangularis. The free edge of the fold falls over the opening like a valve (Fig. 4). The space, usually situated immediately in front of the upper part of the tonsil, is bounded in front by the anterior palatal arch and the mucous membrane of the mouth. Above it extends into the soft palate, and externally it comes into relation with the deeper structures. The main direction of the cavity is upwards and backwards into the muscular

palate, but its extent and connections are modified considerably by the factors stated above.

1. *The disposition of the plica.*—This may modify the outlet and the capacity of the space in a striking manner. In many the plica is but slightly marked, being mostly conspicuous as a free edge covering the outlet of the fossa at the upper part of the fauces. Its lower part may appear merged in the anterior pillar, from which, however, it can usually be distinguished. Not infrequently in children it may be seen, as already mentioned, spread over the front of the tonsil, giving to the gland a smooth contour when viewed from the mouth (Fig. 5). This form may persist in the adult, and I have seen it more than once in individuals past middle life presenting its characteristic triangular shape, covering the anterior surface of the tonsil. As the tonsil disappears the plica recedes and approaches the posterior pillar more, and may be found traversing the interfaucial space obliquely downwards and backwards.

The sketch represented in Fig. 6 (1) was taken from a lady aged thirty-five, who had suffered from an attack of tonsillitis on the right side, which had left some pain and discomfort for some months afterwards.

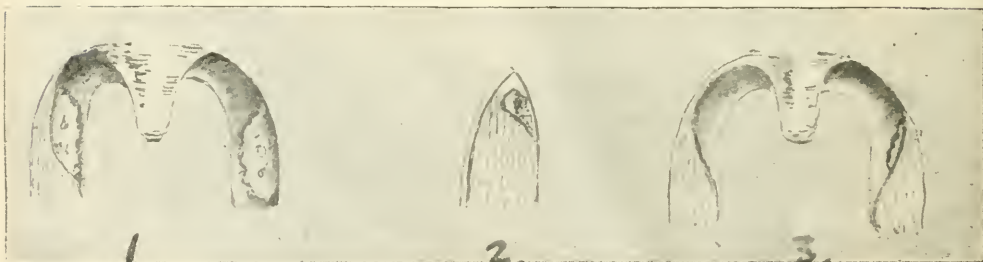


FIG. 6.—Diagrams to show variations in plica. (See text.)

On that side the margin of the plica curved downwards and backwards, enveloping the lower half of the tonsil. There was a large fossa which contained much caseous matter, whilst on the other side, where the fold was not well marked, the space was much smaller and its outlet larger. The edge of the plica may remain free, but in many it gets merged in the subjacent structures and cannot be separated, though its characteristic shape may be readily made out. As a rule the upper part of the tonsil is left uncovered, the lower half being completely hidden from view. In the process of time the remainder may undergo atrophy, and we have the condition as in Fig. 6 (3), taken from a man aged thirty-eight, where the left tonsil just shows above the edge of the fold and the right has quite disappeared. A condition of things in close similarity may be observed after excision of the tonsil. If the plica is left undisturbed by the operation it may move backwards, so to speak, and assume the position seen in the figure.

I have already remarked that the plica may become merged in the anterior pillar, its upper part alone remaining as a crescentic fold. This may undergo further shrinking, and interfere with the outlet of the fossa, in

which the secretions may become pent up. Or in cases where it spreads out like a fan over the tonsil, atrophy of the gland may occur in an irregular manner, carrying the fold more sharply over the opening of the fossa, with the same result; and if repeated attacks of inflammation have preceded, this may take place in an even greater degree. This explains the appearance in Fig. 6 (2), from a patient over sixty years of age, where the plica looked as if it were on a different plane to that of the anterior pillar. It enveloped almost entirely the small right tonsil, of which only the apex was visible over its upper edge, and the contracted orifice led into a fossa of considerable size.

Where the plica is adherent along its margin to the tonsil a space is enclosed on the anterior aspect of the gland and behind the anterior palatal arch, which may be regarded as a prolongation of the fossa. Into it a probe can be passed through the mouth of the fossa, and I have occasionally been successful in turning out of it cheesy material having a foul odour by exerting pressure on the anterior pillar from below upwards.

2. *The mode of development of the lymphoid tissue* in the sinus tonsillaris gives rise to many variations and is the most important factor in modifying the fossa. As a rule in young adults the upper part of the tonsil is much less compact than the lower half. The lymphoid tissue is arranged more loosely, and may even take the form of an open network with its separate strands distinct and well defined. This may be well observed by opening up the fossa in a fresh specimen. Little processes of adenoid tissue may also be seen running up from the tonsil in the lining membrane of the fossa, and these extend in the form of fine bands, or form little islets embedded in the membrane, as represented in Fig. 7 (D). Free communication commonly exists between the crypts in this part of the tonsil, and one or two large orifices may be seen on the surface. Fig. 4 shows this well. In a case under my care pus which had collected in the fossa after blocking of the outlet discharged through a crypt in the middle of the tonsil, and it was not until the fossa had been opened up and drained that the discharge from the lower opening ceased. The development of the tonsil in its upper part may be so great that the fossa is reduced to small dimensions. In such cases, where the tonsil is enlarged, as it were, into the palate, the fossa extends in front of it immediately under the mucous membrane, being converted into a more or less flattened space, which may, however, reach as far as the jaw, and even dip behind on to the outer side of the tonsil. However great the enlargement of the gland, I have never failed in a young adult to find the fossa represented.

According to my observations the situation of the space may be modified by the arrangement of the lymphoid tissue in three directions:—

(a) Where the body of the tonsil is well developed and the upper part but slightly, the fossa is generally a wide space occupying the apex of the interstitium, and may be readily examined in its extent with the help of a rhinoscopic mirror. Bounded in front by the plica and the anterior pillar, it is open to the fauces, and in such a condition retention of discharge is, of course, hardly possible (Fig. 7 (A)).

(b) If the upper part of the tonsil is well marked, the fossa ordinarily

opens on the upper and anterior aspect of the interstitium, being bounded behind by a process of the gland, which extends upwards. This is the commonest form and the most important, from the circumstance that the plica lies closely over its narrow outlet (Fig. 7 (B), and Fig. 2).

(c) A rare condition of the fossa was met with where it lay to the upper and posterior aspect of the tonsil (Fig. 7 (C)). The adenoid tissue had developed upwards behind the anterior palatal arch, and occupied closely the front part of the interstitium. In the cases observed there was certainly a small space covered by the plica in front, but behind the tonsil,

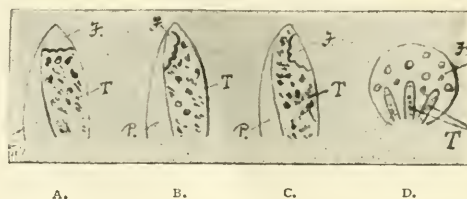


FIG. 7.—Diagrams to show variations in arrangement of lymphoid tissue.

(See text.)

T=tonsil. F=fossa. P=plica.

nearer the posterior pillar, the recess was much greater, and, in one instance, of considerable size, from which large cheesy masses were repeatedly removed. In all the cases the condition gave the appearance as if it were produced by a prolongation upwards of the lymphoid tissue, which had divided the upper region of the interstitium longitudinally.

EXTENT.

I have already pointed out how, from adhesion of the plica to the tonsil, the fossa may be prolonged downwards in front of that gland. It may stretch outwards behind the palato-glossus muscle, covered by little more than mucous membrane, almost to the lower jaw. In one instance a probe passed into it could be made to impinge on that bone at the junction of the body with the ascending ramus. It may bend over the apex of the tonsil and dip down on the outer or deep surface of that gland, coming into relation with the superior constrictor of the pharynx and other deep structures. It occupies the soft palate to a variable degree; anteriorly it may come so far forward as to have little more than a layer of mucous membrane separating it from the mouth.

The clinical bearing of this is evident when it is remembered that abscesses in connection with peritonsillitis commonly point on the anterior surface of the soft palate, and I believe in the majority of cases that disease finds its starting point in the space.

Posteriorly, as a rule, the fibres of the levator palati and the palato-pharyngeus are behind it; but in a specimen examined in the *post-mortem* room it was separated from the naso-pharyngeal cavity by the thin superficial layer of the latter muscle and the mucous membrane only, and when the specimen was held up to the light it was remarkable how thin the wall was. This fact ought to be borne in mind not only in

connection with the deep pointing of tonsillar abscesses, but inasmuch as it suggests that an affection of the fossa may extend to the nasopharynx and set up trouble in that cavity.

I have notes of a case of discomfort and pain continuing after an attack of sore throat, in which, besides distinct pain on pressure over the fossa on the right side, there was marked tenderness on the posterior aspect of the soft palate on the same side.

FREQUENCY.

Towards middle life the tonsil begins to show signs of atrophy, and in advanced age little or no trace may be found of it. Coincident with the disappearance of the adencid tissue, the fossa becomes more shallow, and if there has been no obstruction to the outlet it may eventually be represented by nothing more than a dimple. In children and young adults I have never failed to find the space—in some, perhaps of small size; but in middle life or above it, it is not uncommon to find but little left of it, a small opening, it may be, indicating its former position. An interesting specimen which I obtained from a man about forty-five years of age exhibited complete disappearance of the fossa on the right side, its former position being shown by a shallow dimple; on the left side, although the adenoid tissue had atrophied, we had the fossa remaining as a roomy space, with a contracted outlet, and filled with purulent material containing calcareous particles (which had to be broken up before they could be evacuated), and masses of the *leptothrix buccalis*. In a number of old subjects which I examined in the dissecting room, practically no trace was found of the fossa, the interstitium being quite smooth, with the exception, perhaps, of a slight depression marking its former site.

II.—AFFECTION OF THE SUPRATONSILLAR FOSSA.

I do not propose to deal fully with the different affections met with in connection with the space, and it will answer my purpose sufficiently if I refer briefly to the more common ones, reserving for a separate paper the important question of the fossa as a starting point of infection.

SUPPURATIVE DISEASE.

Suppuration may be met with in the supratonsillar fossa in a variety of forms. It may show itself as a scanty flow of thin pus, discharging more or less continuously from the opening, and giving rise on occasions to some slight amount of discomfort, but which often dries up eventually without any interference. Or the discharge may be more abundant and of a thicker consistency. Patients then make a complaint of "matter running into the throat," and on examination pus having a foul odour may be mopped up or squeezed out of the space by pressure over the anterior palatal arch. The opening is probably somewhat narrow, and though there is no actual obstruction to the outflow of pus, the anterior surface of the soft palate over the region of the fossa may be more prominent and distinctly tender on pressure. A probe armed with cotton wool and passed into the cavity may turn out a quantity of evil-smelling

material with cheesy masses and particles of grit. The latter may proceed to the formation of a calculus, and in a specimen I obtained *post-mortem* I was obliged to use some force by means of a director to break up such a calculus before it could be evacuated through the narrow opening. Masses of leptothrix may be lodged there, keeping up suppuration and leading to attacks of pharyngo-mycosis. Granulations develop inside the cavity, and it is not uncommon to find that the interior readily bleeds on brushing it out. This condition often follows acute "sore throat," or a history may be obtained of it having been first noticed after an attack of diphtheria or scarlet fever, whilst in some it is associated with the presence of tubercle. It may last for a prolonged period, being associated in many with some enlargement and tenderness of the cervical glands, and leading to recurrent attacks of tonsillar inflammation. Clearing out the space and brushing it with a caustic solution is usually only a palliative measure, and unless free drainage is established by removing part of the tonsil, and enlarging the opening, the discharge is not likely to cease.

Collections of pus in the fossa, which discharge periodically, sometimes come under notice and give rise to a definite train of symptoms. Here the patient gives a history of discharge of matter into the throat at times; in the interval he experiences more or less discomfort, sometimes amounting to pain in the tonsillar region, which is relieved by the onset of the discharge. In such cases we have to deal with a fossa which may extend downwards in front of the tonsil, or even to the deep aspect of the gland, and in which the outlet is small and liable to block. As the pus accumulates it induces a feeling of fulness and aching in the throat, which ceases only on the appearance of the discharge. We have, in fact, to deal with a condition closely resembling an empyema—if such a term is applicable to a soft-walled space—where the establishment of free drainage is the first principle of treatment.

The following cases are quoted for the purpose of illustrating the clinical particulars of this form of suppuration :—

Case I. A lady, aged twenty-three, was seen by me early in 1896, complaining of discharge from the throat, which had existed for some time. It began four years before, and followed a severe cold, in which the throat was implicated. There was a good deal of discomfort after the inflammatory attack had subsided, and there was noticed a discharge of thin offensive matter from the upper part of the right tonsil. This had continued up to the time I saw her, the most noticeable feature latterly being that it usually stopped for a day or two only to burst out in greater quantity, either from the opening of the fossa or at a point in the middle of the tonsil. She was able by pressure over the front of the tonsil to squeeze out pus, and this she was in the habit of doing at regular intervals, affording, as it did considerable relief from a feeling of discomfort about the tonsillar region. On inspection of the throat, the plica was adherent to the right tonsil, except at the upper extremity of the fold. When pressure was exerted by the patient, who ran the finger along the anterior palatal arch from below upwards, pus was observed to exude from the opening of the fossa behind the plica, which on an average measured

about ten to fifteen drops, and possessed a foul offensive odour. The opening of the cavity was much narrowed by the thickened bound-down plica, and led into a roomy fossa, which passed down in front of the tonsil, as well as outwards and upwards. Occasionally the discharge was said to take place through a crypt orifice about the middle of the gland, but this was only when the usual channel did not appear to act. This occurrence will be readily explained when one remembers the loose texture of the upper part of the tonsil, and that crypts which communicate freely with the fossa may open as far down as the middle of the gland. The patient stated that at one time cheesy matter used to be evacuated, but atterly the contents had been entirely pus. The treatment adopted in the first place was to cleanse out the cavity and brush it with carbolic, chromic, and trichloroacetic acids in succession; but little progress was obtained in the way of healing until the fossal opening was enlarged by galvano-cautery and the interior scraped out, precautions being taken by means of a small piece of dressing to prevent too early contraction. This soon led to the drying up of the cavity, which has not given any further trouble, nor has there been any discharge from the crypt.

Case II. shows the advantage of another mode of establishing drainage. This patient was seen in January, 1897, complaining of shooting pains in the left side of the throat, radiating up to the ear and out into the neck, with tenderness and enlargement of the cervical glands on the same side. This had lasted for nearly a year, and had come on after an acute "sore throat." Both tonsils had been excised by a medical man, with little or no relief to the symptoms. On examination there was tenderness in front of the anterior pillar of the fauces, and on pressure thin offensive matter escaped from the fossa. The apex of the left tonsil had been left untouched by the guillotine, and remained firmly adherent to the plica; so that partial excision of the tonsil had quite failed to open up the fossa, and a probe on entering the narrow orifice passed down in front of the remains of the gland into a roomy space, which contained granulations, as bleeding occurred even on gentle manipulation. This sign I have frequently observed in suppurative fossæ filled with granulations. The plan adopted here was to punch out the apex of the tonsil left behind, the fossa being thus opened up and easily drained.

In Case III., seen six months ago, the intervals were much longer, and ranged from three days to a fortnight. There was considerable discomfort during the cessation of the discharge; the side affected was the left, and but little of the tonsil remained. At the time of my first examination discharge had been in abeyance for a week. The left side of the soft palate along the anterior palatal arch was more prominent and tender to touch. The upper part of the plica was thickened and contracted; the opening into the fossa was represented by a depression, through which a fine probe was passed without much resistance into the fossa, giving vent to nearly a drachm of creamy offensive pus. This cavity could sometimes be emptied by the patient, but not infrequently the discharge ceased for some days and then burst out in quantity. The opening required dilating before it could be enlarged finally and the fossa curetted and drained.

It seems unnecessary to give the details of other cases of which I have

notes, as they do not differ materially from the above, and, moreover, I scarcely think that further evidence is required to show that the supra-tonsillar fossa is subject to a suppurative affection which possesses some similarity to an empyema, and demands treatment in the same way—by free drainage. In the question of treatment, I may point out that the general direction of the space is such as to give natural drainage, and it is only when the outlet is interfered with that difficulties arise. In many it suffices to enlarge the opening by taking away part of the plica; in others a satisfactory result is not obtained until the upper part of the tonsil is punched out, or even the gland enucleated. In my experience, the employment of the galvano-cautery is undesirable, inasmuch as adhesions are apt to occur which may render the contraction greater, and make the last state of things worse than the first.

PAPILLOMA OF THE PLICA.

Little masses of lymphoid tissue may be frequently seen attached to the plica triangularis, and get mistaken for papillomata of the tonsil. They are minute nodules of adenoid tissue which develop in the plica as they do in the anterior pillar of the fauces and velum palati, and get squeezed out, as it were, and become stalked. Whether in these the epithelium proliferates and takes on a papillomatous growth is not definitely settled, though one meets with instances where they consist of lymphoid tissue covered by heaped-up epithelium. True papillomata of the plica are met with and constitute a large proportion of the so-called papilloma of the tonsil. A specimen which was shown by me at the Laryngological Society of London,¹ though situated on the anterior surface of the tonsil, grew from the plica, which was quite loose and movable over the subjacent gland. In a boy under my care at the throat department of the Cardiff Infirmary, a flat papilloma was found attached to the tonsil just below the opening of the fossa. It was impossible to say whether it grew from the plica, which had become fused with the tonsil at that point. Thin discharge oozed from the cavity, and, taken in conjunction with the situation, suggested a causal relation to the papilloma.

Most of the cases recorded as papilloma of the tonsil have been situated at the upper part behind the anterior palatal arch, and it is not straining facts too much to suggest that they probably grew from the plica, and that discharge from the fossa was a factor in their causation.

MALIGNANT DISEASE.

In one case, of which I possess notes, malignant disease was observed to start around the opening of the fossa. The patient was a man forty-nine years of age, who was sent to the throat department of the Cardiff Infirmary by his medical adviser. He had complained for two or three months of persistent pain on the right side of the throat shooting into the ear. The pain was referred to the upper part of the interfaucial space, and this was tender on pressure. There was no enlargement of the tonsil, but over the plica, and extending backwards on to the velum

¹ "Proceedings of the London Laryngological Society," February, 1898.

palati, was a patch of hard infiltrated tissue about half the size of a three-penny piece. It had begun, according to the patient's account, immediately behind the upper part of the anterior palatal fold, and had spread backwards to the adjoining part of the palate. The plica was partially adherent to the tonsil, which was uninvolved.

Specific treatment having proved of no avail I advised the excision of the diseased part. This was carried out thoroughly by a surgeon, and the disease, which proved to be epithelioma, was found limited to the plica around the outlet of the fossa and the neighbouring region of the interstitium. Complete relief was afforded for the time, but recurrence *in situ* and in the deep glands took place a year later. I have details of another case furnished me by one of my colleagues where a small growth was situated behind the palatal fold; but as I did not see the patient myself I will not enter into it.

FOREIGN BODIES.

Foreign bodies sometimes lodge in the fossa. When the space has a wide opening fish bones or small splinters of meat bone may effect an entrance and lie there for an indefinite period. This would probably explain what happened in a patient who gave me the history of a fish bone having lain hidden in the tonsil for over a month, and which eventually worked out from behind the fold, and was produced by the patient to the discomfiture of the medical man, who had repeatedly examined, but failed to see it. In one case observed by myself, a long, narrow fish bone entered the fossa, from which on careful examination the end could be seen protruding. It was seized by a forceps and easily drawn out. The opening of the space was not large, and it was only on pulling the plica forward that the foreign body was detected. It was not visible on mere inspection.

The QUESTION of PRIORITY of CLAIM to that OPERATION on the ANTRUM of HIGHMORE combining TEMPORARY OPENING through the CANINE FOSSA and also a COUNTER OPENING in the INFERIOR MEATUS.

At the London Laryngological Society's meeting in February last, as an outcome of a discussion on a case of Waggett's treated by this method, the question of priority came to the fore. Scanes Spicer certainly appears to have shown the first recorded case in Europe, at the West London Medico-Chirurgical Society in June, 1894,¹ and he afterwards read a paper on the same subject at the British Medical Association's meeting in the same year.² The writer was present when Spicer's first case was first shown, and he stated (though unfortunately unable to state by whom) that the operation had already been described. Luc³ has more

¹ Spicer, June, 1894, "W. L. Med.-Chir. Soc. Repts.," Vol. VI., p. 179.

² Spicer, "Brit. Med. Journ.," Dec. 15th, 1894.

³ Luc, May 4th, 1897, JOURN. LARYNG., Sept., 1897.

recently described a similar procedure. The credit, as far as we can learn, however, belongs to neither of these two claimants. Caldwell¹ had already described the operation, and for the sake of those who have not seen the original paper we quote the salient points :—

“My own method in these cases has been to make a large temporary opening in the canine fossa, through which the antrum is explored, all deleterious material removed, and the antrum thoroughly cleansed. All subsequent irrigation and medication is conducted through the opening in the inferior meatus.”

Thus Spicer, who comes midway in seniority, made what may be considered a retrograde movement, by maintaining the patency of the buccal opening for a more or less lengthy period ; Luc, on the other hand, exactly copies the operation of Caldwell, of which they also are doubtless unaware, though that does not invalidate Caldwell's obvious right to the paternity of the operation. *Suum cuique.* *Lake.*

SOCIETIES' MEETINGS.

LARYNGOLOGICAL SOCIETY OF LONDON

Ordinary Meeting, February 9th, 1898.

HENRY T. BUTLIN, Esq., F.R.C.S., *President, in the Chair.*

Report of Morbid Growths Committee.

From case shown by Dr. Spicer as “Rapidly Recurrent Tumour of the Nasal Septum.” The committee finds that the growth is a fibro-angioma, and quite benign in character.

Slide from case shown by Mr. Morley Agar as “Tumour of Tongue.” The specimen is composed in part of dense fibrous tissue, and in other parts of a looser connective tissue with some connective tissue-cells. There is no evidence of malignancy. The committee would call attention to the fact that such growths in the tongue without any admixture of lymphangiomatous tissue are rare.

Slide from case shown by Dr. Bond as “Recurrent Laryngeal Growth.” The patient was a female, aged twenty-seven, and had had a growth removed from the larynx at least five times in two years. Growth was as large as a couple of small peas, and sprang from the very bottom and posterior part of the left ventricular band, and hung down between the cords. It did not look like a papilloma, and on section it seemed to be an epithelial growth of unusual character. The committee confirms Dr. Bond's observations, but as the members had only one section to

¹ Caldwell, “New York Med. Journ.,” Nov. 4th, 1893. JOURN. LARYNG., March, 1894.

examine, they desire to postpone a definite report until they have examined other sections.

The Supratonsillar Fossa.

Dr. PATERSON showed specimens and photographs of this space. His attention was drawn to its importance by a case which came under his care two years ago, and since that time he had accumulated a large number of observations on its variations and the affections to which it is subject. A search into the literature showed that it had been practically ignored by writers on diseases of the throat, and the index of the "Centralblatt für Laryngologie" contained no reference to it. The space which is met with in the majority of individuals is situated behind the anterior palatal fold in its upper part, and has been erroneously looked upon as an enlarged tonsillar crypt. It has been described by His as an anatomical space, to which he gave the above name, and he regarded it as the remains of the second visceral cleft. The exhibitor, from the examination of a large number of specimens, both in the living and the dead subject, concluded that two main factors influenced the situation and relations of the space. (1) The disposition of the plica triangularis may affect the size and the outlet of the cavity. This structure is a triangular fold of mucous membrane found projecting from the anterior palatal arch between the fourth and fifth months of foetal life, and frequently persistent into adult life. (2) The development of the tonsillar adenoid tissue in the sinus tonsillaris varies considerably, and will modify the extent and even the position of the fossa; in some, indeed, its situation is not above the tonsil, and the designation "palatal recess" would perhaps be a more appropriate term. It extends in various directions, and comes into relation with the deeper parts. It is liable to certain affections; in two cases the exhibitor observed it as the starting-point of malignant disease, and its importance is increased by the fact of its being frequently the seat of infection in certain forms of disease.

Dr. SCANES SPICER was much interested in the definite anatomical and developmental facts concerning the supratonsillar fossa brought forward. He had long regarded the fossa as a morphological entity. Clinically the morbid conditions (retention cysts, grit, calculus, and suppuration) as common causes of chronic and recurrent discomforts referred to the tonsils were well known to most specialists, and personally he considered they usually demanded surgical interference. Formerly he had confounded these fossal conditions with lacunar disease; later he had regarded them as occurring in a cavity formed by abnormal adhesions; but for some years he had been convinced that we had in this supratonsillar recess a definite and regular anatomical structure. He had frequently known the adenoid mass of the faucial tonsil to hypertrophy into the fossa, from which it could be easily withdrawn.

Dr. HILL expressed some surprise that Dr. Paterson had found no literature on the subject, as in the "Proceedings" of the Society a little while ago a case was brought forward in which a calculus was lodged in the fossa.

Dr. STCLAIR THOMSON was also surprised to hear that there were so

few references to the subject in leading text-books. He was under the impression that the supratonsillar fossa was recognized and frequently referred to in current German literature. Quite recently he had read an article by Grünwald in the "Munchener medizinische Wochenschrift" recommending that peritonsillar abscesses should be opened through the supratonsillar fossa; and Killian (in the "Monat. für Ohrenheilk.,") had pointed out that abscesses of the tonsil could be easily opened with a probe in the peritonsillar fossa. This region, which had been so fully investigated and well described by Dr. Paterson, was of clinical importance with regard to peritonsillar collection of pus. For Dr. Thomson thought that most laryngologists opened the abscess cavity in this region, although they did not enter it, as Grünwald recommended, between the pillars of the fauces, but by puncturing the anterior pillar with a pair of sharp sinus forceps, which were then opened as they were withdrawn.

In reply, Dr. PATERSON wished to emphasize the important difference between this, and what it has usually been regarded as, viz., an enlarged tonsillar crypt.

Papilloma of Tonsil. Shown by Dr. PATERSON.

The specimen was obtained from a boy, aged ten, who came under notice for enlarged tonsils. These were excised, care being taken to bring away intact the little tumour. It was about the size of a hemp seed, was provided with a well-marked stalk, and consisted microscopically of squamous epithelium. It gave rise to no symptoms. The object in showing the specimen was to point out that, although situated on the anterior and inner aspect of the tonsil, it did not grow from that gland, but sprang from the plica triangularis, which was well marked. The latter fold could be readily made out lying loosely over the tonsil and giving origin to the papilloma. From his observations the exhibitor concluded (1) that most of the so-called papillomata of the tonsil—which may either be little masses of lymphoid tissue covered to a varying extent with epithelium or true papillomata, as in the present specimen—spring from the plica, and do not grow from the tonsil; and (2) that they are frequently in relation to the outlet of the supratonsillar fossa, and may be induced by discharge from that cavity. Care is often necessary to distinguish the plica, which may be intimately adherent to the subjacent tonsil.

A New Snare for Throat and Nose Work. Shown by Dr. LAMBERT LACK.

The chief advantage claimed for this snare is that the wire loop, having been adjusted round a growth, can be rapidly drawn tight so as to seize the growth firmly, and that then, if required, the loop can be further tightened by a screw. By this latter movement sufficient force is obtained to cut through the firmest growths; at the same time the division is slowly effected, and all bleeding arrested. The instrument is strong in all its parts, the mechanism simple, and it has nothing to get out of order. The instrument is entirely of metal, and easily takes to pieces for cleaning, etc. The wire can be easily and quickly attached, and is very firmly

fixed. It may be of any size, and the loop may be over six inches long. The snare works noiselessly; the clicking of some instruments is very distressing to sensitive patients. The instrument has three ends—a thick barrel for very tough growths, a fine end for aural and nasal polypi, and a curved end for use in the larynx or post-nasal space.

The instrument requires the use of two hands to work the screw; but, the growth having been already firmly seized, I do not think this can be considered a disadvantage.

I am greatly indebted to my friend Mr. Bingham for much help, and for suggesting the method by which the screw is brought into action; and to Messrs. Mayer & Meltzer, who have made the instrument for me.

Radical Cure of Long-standing Antral Empyema.

Mr. WAGGETT showed a middle-aged woman with an eight years' history of left antral empyema, during which time she had practised daily irrigation through a tube in the alveolus. He performed Luc's operation, making a large opening through the canine fossa, removing entirely the polypi and the thick purple papillated lining of the cavity, which was cleared until the white bone was laid bare throughout. The bony structure was exceedingly soft and yielding, and in inserting a drain-tube held in a pair of fine sinus forceps through the hole drilled into the inferior meatus, the hard palate was wounded. The latter fortunately healed in the course of a few days; nevertheless to avoid such accidents it would seem advisable to puncture and insert the tube from the nasal side rather than the antral. The muco-periosteum was sutured over the canine fossa wound, which healed firmly. The drain tube into the bone was removed on the third day, and in the speaker's opinion might well be dispensed with altogether.

No reaction followed the operation. From the day of operation, five weeks ago, no pus has been secreted in the cavity: injections made through the inferior meatus opening at intervals of eight days returning perfectly clear, while the nose has been entirely free from discharge.

Dr. WILLIAM HILL and Mr. LAKE demurred to the credit of this operation being given to Luc, as Dr. Spicer had reported and shown a case of this particular operative procedure before Luc had written his paper on the subject. Senn has also independently described an osteoplastic resection of the anterior wall with a nasal opening.

Dr. STCLAIR THOMSON asked if a piece of the bony wall was detached and replaced in making the opening through the canine fossa, and how long the drainage tube from the antrum into the inferior meatus was left *in situ*.

Dr. SCANES SPICER was surprised at Waggett's referring to the method as a new one. Luc ("Bull. et Mém. de la Soc. Franç. d'Otologie, Laryng., et de Rhinol.," 1897) had, indeed, claimed it as a "new operative method for the radical and rapid cure of chronic empyema of maxillary sinus." He specially claims (*Ibid.*, p. 81) as the original feature of his operation the "creation of an artificial opening which serves to drain the sinus cavity by the corresponding nasal fossa." He also gives as the date of his first operation case, February 16th, 1897 (*Ibid.*, p. 84).

Both Waggett and Luc have overlooked the numerous references which have appeared in the English medical press during the last four or five years detailing a method differing in no essential detail from that now put forward (*vide* "Brit. Med. Journ.," December 15th, 1897; "Journ. of Laryng.," "Proc. Laryng. Soc. Lond.," etc.). Moreover, a formal discussion on chronic antral empyema was held by the Laryngological Society of London, one of the leading features of which was the general condemnation of the method advocated by the speaker on that occasion as unnecessarily severe, leading to facial deformity and falling in of cheek, rendering patient unable to smoke his pipe and leaving a permanent bucco-antral fissure. Further experience has confirmed the speaker that these objections were visionary and theoretical; and, in fact, not one of these sequelæ ever followed. Many others besides Luc were now using the method with success. What he wished to emphasize was that this large canine fossa opening, curettement, no buccal drainage tube, free counter-opening into inferior meatus of nose for drainage, had been practised largely by British rhinologists for about five years and numerous references to the results are to be found. He congratulated Waggett on his result in this case, and, speaking from a large experience, could assure the Society that in *uncomplicated chronic* antral empyema they would find the method radical and certain, and not followed by any one of the dreadful results predicted for it.

Mr. WAGGETT, replying to Dr. Thomson, said that, with the exception of some white fibrous tissue underlying the infraorbital nerve, all the soft structures were removed. He did not for a moment dispute Spicer's claim to originality in the method, and would give him all credit for it; and with reference to the latter's opinion that where the floor of the antrum was on a lower level than that of the nose, it was advisable to leave the canine fossa opening patent for purposes of drainage, Mr. Waggett thought it better to avoid the necessity of prolonged drainage altogether, by removing the glandular lining of the cavity.

Immobility of Right Cord. Shown by Dr. WILLCOCKS.

Henry O'B., aged seventy. He first came under observation about five months ago, when he had loss of voice and considerable swelling, affecting chiefly the right side of the glottis and the interarytenoid. The swelling gradually subsided under the influence of soothing inhalations and iodide of potassium, and was for a time confined only to the posterior end of the right cord.

Present condition.—The right vocal cord is immobile and somewhat congested. There is no evidence of intrathoracic pressure of any kind.

Sir FELIX SEMON thought the case one of mechanical immobility, both from the history and the improvement under potassium iodide. There was a particularly "clean" appearance about the larynx, which he thought was indicative of its non-malignant nature.

Mr. BUTLIN inclined somewhat to the malignant nature of the case, on account of the presence of enlarged glands and the bad health of the patient.

Early Epithelioma of Cord. Shown by Dr. HERBERT TILLEY.

Fred. W., aged forty-nine. Patient complained of loss of voice for two months, but there was no pain or difficulty of swallowing. At the anterior part of the left vocal cord is a whitish patch; the posterior part of the cord congested, and more so than the corresponding part of the right one. There is slight loss of movement on phonation.

The PRESIDENT and Sir FELIX SEMON both agreed it was an excellent case for operation, but suggested the advisability of removing a small portion of the growth for examination previous to the radical operation.

Case of Primary Epithelioma of the Uvula. Two Coloured Drawings of the Parts and Microscopic Sections of the New Growth. Shown by Dr. WALKER DOWNIE.

The patient, a man aged fifty-six, came under observation in July, 1897. He complained of having had sore throat for fully two months, and that within the past few days he had had some difficulty in swallowing, along with considerable discomfort in breathing while asleep.

On examination the uvula was represented by a large fleshy body, the greater portion of its surface anteriorly and to the right was ulcerated, the mucous membrane in the middle line and to the left side being alone intact. The tip, which rested on the dorsum of the tongue, was also raw. The whole structure was found to be hard and firm on palpation, and manipulation caused the surface to bleed. The faucial pillars were unaffected.

It was diagnosed epithelioma, and without delay the whole of the uvula was removed under cocaine, the incisions going well into the soft palate. The surface was practically healed in four days; and now, at the end of six months, the man is in perfect health, and there are no evidences of recurrence.

Interarytenoid Growths in a Tubercular Patient. Shown by Mr. LAKE.

Patient was a female. The growth occupied the upper portion of the interarytenoid region, and was a pale pink colour, but no breach of surface. No subjective symptoms except loss of voice.

The pieces shown were removed on February 3rd, 1898. Since then the patient has improved very much in her general condition.

Dr. CLIFFORD BEALE asked Mr. Lake to keep the patient under observation, if possible, and to report the result of the operation after an interval of three months. He thought it very desirable that the limits of operation on this class of case should be defined. The interarytenoid tumours were well recognized since Prof. Stoerk first drew attention to them; and, as a rule, they did not give rise to sufficient trouble to warrant any operation. The resulting wound was apt to remain unhealed, and to become the starting-point of a further tubercular infiltration. In Mr. Lake's case the voice had been improved, but there remained a large ragged sore in the interarytenoid space, and it would be desirable to watch its progress.

Carcinomatous Tumour of the Epiglottis and Base of the Tongue.

Mr. SPENCER showed a tumour which had occupied the upper epiglottis and superficially the base of the tongue. It was about the size and shape of a Tangerine orange, with a nodular surface, and appeared firm and white on section. Under the microscope the growth was found to be a carcinoma. Columns of epithelial cells projected downwards from the surface epithelium to mingle with the main structure of the tumour, which consists of polyhedral, oval, and spindle cells, and soft connective-tissue stroma. In the lymphatic gland, which was enlarged in the neck, the structure at first sight appeared like an oval and spindle-celled sarcoma with a stroma between the individual cells. There are a few nest-cells in the primary growth, about one in each section, but none have been met with in the glands. A distinct alveolar arrangement is absent both from the primary and secondary growth; but there can be little doubt that the growth originated in the epithelium, in the fold between the epiglottis and tongue.

The tumour was taken from a man over seventy, who complained of increasing difficulty in swallowing. He had suffered for three or four months, and had become reduced to soft substances like well masticated bread and butter. He was further troubled by the constant rising up into the mouth of ropy mucus, and a tense swelling in the neck had formed, which gave him pain. He had lost flesh and felt weaker since the swallowing had become difficult. His breathing had not troubled him, but his voice had become somewhat muffled. On examination the lower part of the pharynx appeared to be completely filled by the tumour, which could be touched by the finger; but neither the opening of the larynx nor that of the œsophagus were visible. There was an enlarged superficial gland in the neck, which was breaking down, and was tense. When the administration of the anæsthetic was commenced the patient became dyspnoic, and preliminary tracheotomy was at once done. The pharynx was then more thoroughly explored by the finger. The larynx was found to be drawn up behind the tumour, and the aryteno-epiglottic folds were stretched over its posterior surface. Transverse subhyoid pharyngotomy was therefore done, the base of the epiglottis cut across, and the aryteno-epiglottidean folds divided. A pedicle was thus made, and the tumour was quickly removed by the galvano-écraseur. The wound in the pharynx was completely sewn up, the tracheotomy tube removed, and the broken-down gland in the neck incised, wiped out with a strong antiseptic, and the skin united. The previously weak patient stood this palliative operation well, could swallow easily, and felt relief from the tension in the neck. Unfortunately on the fifth day there was a bad fog, some bronchitis then started, and the patient died a week after the operation. There were no signs of pneumonia, neither during life nor *post-mortem*. The pharyngeal wound and the cut made into the broken-down gland were firmly stuck together, and the tracheotomy wound was filling up by granulations. The primary tumour had been completely removed, but there were some small nodules, apparently in the lymphatics of the pharyngeal wall, also the secondary gland in the neck, but nothing else abnormal.

It does not appear that the tumour could have been satisfactorily

removed by an *écraseur* through the mouth, even at an early stage, for there was no pedicle until the base of the epiglottis and the aryteno-epiglottidean folds had been cut through ; and if these latter had been included in the snare, œdema glottidis or other complications might have ensued.

Mr. WAGGETT suggested that the Morbid Growths Committee should investigate the nature of the growth.

Sir FELIX SEMON commented on the curious fatality which attended subhyoid pharyngotomy, and yet the *post-mortem* evidences gave no explanation of the matter ; according to Sendziak, fifty per cent. died.

Mr. BUTLIN's experience was much the same, and he instanced a case in which jaundice and acute mania preceded death.

Epithelioma of Left Vocal Cord. Shown by Mr. STEPHEN PAGET.

D. R——, male, aged forty-three, had suffered from hoarseness for six months, and now experienced some pain on swallowing.

The left vocal cord was ulcerated and thickened, the ulceration extending to the interarytenoid space. It was quite immobile on phonation. An enlarged gland was present in the left submaxillary region.

Sir FELIX SEMON advised operation without delay, and said that he feared the disease would be found more advanced than the laryngoscopic appearances suggested.

Mr. BUTLIN agreed, and also stated that there was an enlarged submaxillary gland, and that a partial laryngectomy might be necessary as well as removal of the gland.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.

General Meeting, January 28th, 1898.

F. MARSH, Esq., F.R.C.S., *Vice-President, in the Chair.*

OTOLOGY.

Otitic Extradural Abscess.

Mr. ATWOOD THORNE showed for the PRESIDENT a man, aged twenty-one, who had first presented himself at the Central London Throat, Nose, and Ear Hospital in March, 1897, complaining of giddiness, headaches, and pain behind the right ear. There was a history of discharge from the ear extending over many years.

He was taken into the hospital with the idea of a mastoid operation being done, and a Leiter's cold coil was applied to the ear. The symptoms disappeared almost at once, and it was considered advisable not to operate, and the patient went out.

Two months later he came back to the hospital, complaining of much pain in and behind the ear, giddiness, and a general feeling of depression. There was a large swelling behind and above the mastoid, and much pus

was escaping from the ear. The swelling was at once incised by the surgeon on duty, and he was admitted into hospital.

When seen by Dr. Grant the following morning the swelling had not completely disappeared. On pressing the swelling pus came out from the ear in large quantities, and it was at first thought that there was a communication outside the skull, directly from the abscess cavity to the external meatus. On cleansing the ear and again pressing the swelling, the pus was seen to be coming from within the tympanum. As this made the diagnosis of intracranial abscess almost certain, it was decided to operate.

On enlarging the incision and baring the bone, pus was seen to be exuding through a small fistula in the squamous portion of the temporal bone.

This fistula was enlarged and the bone chipped away over an area about as large as a penny piece, leaving across it a bridge to prevent hernia cerebri. Granulations which were found on the dura mater were gently scraped away, and the usual mastoid operation was done.

The patient made an uninterrupted recovery, and, until lately, has had no pain. During the last few days, however, he has had some pain, and some granulations are seen to be present.

Dr. MILLIGAN said that, with regard to the case narrated by the President, it was somewhat remarkable how serious intracranial conditions may be accompanied by comparatively few prominent symptoms, for a time at least. He narrated the particulars of a case recently under his own charge which had been mistaken for severe neuralgia, but which was in reality a case of suppurative middle ear disease with imperforate membrane, with mastoid complications and with the presence of an extradural abscess. The main symptom in the case was persistent pain over the right temporal region, with, occasionally, attacks of nausea. Opening and draining the abscess resulted in complete cure.

Dr. WILLIAM HILL suggested that a further mastoid operation would be needed; it was frequently necessary to operate more than once.

Mr. MARSH said he had seen one similar case, and in that the feature was the absence of symptoms. He thought, with Dr. Hill, that a further mastoid operation would probably be necessary.

A Paper on *Five Cases of Cerebral Abscess in connection with Chronic Suppurative Middle Ear Disease* was read by Mr. F. MARSH, F.R.C.S. (Birmingham).

During the last ten years great progress has been made in the surgical treatment of brain abscess caused by purulent inflammation of the middle ear. At least sixty cases of cerebral and twelve of cerebellar abscess have been successfully operated upon and recorded, and many unsuccessful, but none the less instructive, cases have been published.

There is no doubt that deaths still occur undiagnosed, both because the attention of the medical attendant is not drawn to the aural condition, from its supposed trivial importance, by either the patient or his friends, and because the symptoms are often indefinite and often latent for long periods. Large encapsulated abscesses have been found during *post-*

mortem examinations which must have existed for months, if not years, and which during life gave rise to no serious symptoms, and were therefore never suspected. An interesting case is recorded by Dr. Barr of a young man who, during his holiday, was climbing hills in the West of Scotland at the time of the first onset of acute symptoms. He died in a fortnight, and Prof. Coats believed from examination of the lining membrane that the abscess had existed many months.

Even when attention is especially directed to the possibility of an abscess, the difficulty of diagnosing an uncomplicated case in the early stages is often great, and is forcibly shown in a valuable paper by Godlee on "Two Cases of Middle Ear Disease" in Vol. II. of "International Clinic." He has compiled tables showing the most characteristic symptoms which may be feared or expected as consequences of chronic purulent inflammation of the middle ear, viz., mastoid suppuration, lateral sinus thrombosis, septic meningitis, and cerebral abscess. These symptoms are over sixty in number, and it is evidently difficult to reduce them to more reasonable bounds without impairing their accuracy.

In complicated cases—by far the majority—the difficulty of diagnosis is increased tenfold, and is at times impossible without an exploratory operation.

This difficulty can only be diminished by a further record of cases—especially of those which have been under observation in the early stages.

In the notes of the following cases prominence is given to the salient points, and detail, as far as possible, is omitted.

Case I. Chronic Suppurative Otitis Media; Abscess of Temporo-Sphenoidal Lobe; Operation; Recovery.

M. H., aged thirty, came into the out-patient room at the Queen's Hospital on January 16, 1895, complaining of severe pain in the head, chiefly on the vertex and left side. For twenty-five years he had had a yellow discharge from the left ear, but never any pain, nor had he ever been away from work on account of illness. Fourteen days ago, January 2nd, when working down a well, he experienced a sudden and severe pain in the left side and vertex of his head. He went home, but the pain gradually got worse, and two or three days later facial paralysis came on. He had no rigors nor vomiting, and the discharge from the ear was more copious during this time. No local tenderness was found either over or below the mastoid. He was in a drowsy, stupid condition, with dry tongue covered with sordes. Pulse slow, temperature 100·2°—a condition best described as a "typhoid" one. During the next few days he remained in much the same condition, but slightly more comatose. Temperature 100·6° to 102°F., pulse slow, about 60; discharge from ear thin and purulent.

Mr. Priestley Smith kindly examined his eyes and reported: "No decided neuritis; doubtful blurring of discs." In the absence of symptoms indicating mastoid or sinus trouble the case was looked upon as one of temporo-sphenoidal abscess. A trephining was therefore performed on January 19th, and an abscess was found deep in the temporo-sphenoidal lobe, containing about an ounce of thick yellow fœtid pus.

The cavity was gently irrigated with boric acid solution and drained with a rubber tube. He made a steady recovery, the wound being healed on the 6th of February. The pain in the head went after the third day. The facial paralysis was completely gone on February 25th, and the discharge from the ear ceased on March 6th, after careful antiseptic treatment. He was seen again in May, and was then in robust health and at his usual employment.

Case 2. Chronic Suppurative Otitis Media; Temporo-Sphenoidal Abscess; Operation; Recovery.

Mr. B. S., aged twenty-five, was first seen in consultation with Mr. Loxton, in 1890, for an offensive purulent discharge from the left middle ear, with polypoid granulations surrounding the perforation in the membrane. Eight years previously—in 1882—he had an attack of acute left otitis from cold, followed by purulent discharge, which had persisted ever since. He had been under treatment part of the time.* He was placed on an antiseptic and spirit treatment. Marked improvement followed, and he was seen at long intervals as the discharge recurred. There was never any mastoid pain nor tenderness. The question of possible intracranial complication was more than once discussed.

On March 26th, 1896, he saw Mr. Loxton for pain in the affected ear shooting along side of head, and in the occipital region slightly, which he had had for a day or two. His temperature was normal, pulse 74, no headache, no ineptitude, nor any sign of intracranial complication, which was specially looked for. There had been no discharge from the ear for some months. There was an inflammatory swelling on the posterior wall of the bony meatus, partly occluding it, and possibly the cause of the pain. As the symptoms persisted in spite of treatment a puncture was, on March 28th, made into the swelling. No pus escaped, but relief was afforded for twenty-four hours. On March 30th the swelling had subsided, and granulations bathed in fœtid pus were seen beyond it, and he was again placed on the antiseptic and spirit treatment. The neuralgia was as bad as ever, and no relief was obtained from drugs. On April 4th a dentist was consulted, and although no dental cause could be ascertained a left wisdom tooth was extracted under "gas" in the hope of possible relief. On recovering from the "gas" he felt no pain, and for four days he remained well and decidedly improved in health.

The pain returned on the night of April 8th worse than ever, and was localized along the course of the great occipital nerves—no pain in ear or mastoid. The following day I was asked to see him re the possibility of any intracranial trouble, but there was no symptom beyond the occipital pain. His cerebration was quick, temperature and pulse normal. He was given remedies which eased the pain but did not cure it, and he kept in much the same condition until the 16th of April—temperature normal; pulse 70. He then became drowsy, but was rational and intelligent. As the drowsiness might have been caused by drugs, all medicinal treatment was stopped, but by mistake a very large dose of antikamnia was given that evening, and it was felt that this might have increased the drowsiness, which was more marked the following morning.

He was intelligent, and said the pain was better but not well—pulse 64. A brisk purge was given and other remedies discontinued. As the drowsiness increased he was seen the next afternoon by me in consultation with Dr. Holloway, in the temporary absence of Mr. Loxton, and also later by Dr. Suckling. Optic neuritis was now present, pulse rate had fallen to 40, temperature normal, respiration slow, marked drowsiness, and slow cerebation. It was agreed that there was either a temporo-sphenoidal or cerebellar abscess. Early the following morning a trephining was performed over the temporo-sphenoidal lobe, and a large abscess was found, containing some ounces of pus, which spurted out along the track of the exploring probe. The cavity was gently irrigated with warm boracic solution, and a rubber drainage tube used. Immediate improvement resulted, and in a fortnight he was practically well. There was a little rise of temperature once, owing to a slough obstructing free drainage, and for a time there was double vision when the eyes were looking to the left, probably the result of some implication of the left centre for conjugate movement. This symptom disappeared when the tube was finally withdrawn. On the 22nd of June, as the discharge from the ear was still present, the mastoid antrum was opened, and a series of small cells in dense bone, filled with pus, were scraped out and drained. He made a good recovery, and although he had headache rather frequently, at the present time he is in good health and following his profession as an art student.

Case 3. Chronic Suppurative Otitis Media; Mastoid Abscess; Temporo-Sphenoidal Abscess; Operation; Recovery.

Mr. P. H., aged seventeen, was first seen in consultation with Mr. Hallwright, June 26th, 1894, for an offensive purulent discharge from both ears, a sequel of scarlet fever in 1887. The left ear was then the worst, and there were small perforations in the posterior superior segment of each membrane, with granulation tissue around. No adenoid hypertrophy nor nasal abnormality. Acid chromic was applied to granulations and he was placed on the antiseptic and spirit treatment. He improved with this, and the discharge on the left side ceased for long intervals, but there was always a trace on the right. No pain or mastoid tenderness. The propriety of opening the mastoid antrum was more than once discussed.

On September 25th, 1896, I again saw him with Mr. Hallwright. For some ten days he had suffered from neuralgia in his right upper teeth and along the temporo-auricular nerve, and had been taking remedies for it. On the night of the 19th he had been to the theatre and afterwards waited about in the cold for an omnibus.

After he reached home he felt unwell all night, and had a shivering fit lasting about an hour, and the next morning some headache in the right temple—temperature 103°, pulse 84. His ears were much in their usual state, but there was marked tenderness over the right mastoid antrum. As this seemed sufficient to account for the rigor and headache, opening of the antrum was advised. A further opinion was desired by the parents, so he was seen that evening by Mr. Barling, who agreed

with the view taken, and who was present next morning when the antrum was opened. Pus welled up from a series of small spaces in hard bone, which were gouged out and packed with iodoform gauze. For ten days he was much better—temperature and pulse practically normal. He then had some vomiting after food and a feeling of sickness, and a second rigor on the 30th, the temperature rising to 103.2°. He was now seen in further consultation by Mr. Jordan Lloyd, who regularly saw him with Mr. Hallwright and myself. The sickness passed away on withholding food, but the pain in the right temple and in the right molar tooth got worse—so much so that the teeth were examined by a dental surgeon, who, however, could find no dental cause for the pain. He kept in much the same condition *re* the pain, but got weaker and emaciated—temperature generally normal, and pulse 80. On October 8th he was decidedly drowsy, and in the evening this was more marked, and the pulse rate varied from 40 to 120; the pain was still felt acutely. He was trephined by me the next morning, and an abscess opened containing about two ounces of pus. A rubber tube was put in and steady improvement took place. There was still some pain in the right upper molars when the wound was dressed. A fortnight later he was practically well. He has had a good deal of headache at times, but is now in good health. He sailed for the Cape a short time ago.

Case 4. Chronic Suppurative Otitis Media; Mastoid Abscess; Meningitis; Temporo-Sphenoidal Abscess; Operations; Death.

H. H., aged nine, admitted into the Ear and Throat Hospital May 19th, 1896. There was a history of discharge from both ears for three or four years; he had been attending as an out-patient for three months, and had been treated with antiseptic lotions and drops, and removal of polypoid granulation tissue. The right side was the worst, and there were still granulations around perforation. He had been quite well and at school until a week before admission. He was then kept at home, as he complained of headache and had very restless nights, frequently crying out when asleep.

The night before admission, at 10 p.m., he was suddenly seized with what was described as an "epileptiform" fit, which continued without intermission until he was brought to the hospital at 2 p.m., he was then only partly conscious, and there was slight rigidity of both body and limbs, most marked on the left side; there was no retraction of head, no optic neuritis; the pupils were dilated, and there was at times conjugate deviation of the eyes to the left—temperature was 100°, and pulse 130. He was constantly picking at the right upper molar teeth with left fingers. There was distinct tenderness over the right mastoid antrum, so at 4.30 p.m. this was opened and a teaspoonful of pus evacuated. Fluid syringed through mastoid opening came freely through the meatus. He was given frequent small doses of calomel, and bromide when necessary. He lay quiet all night, and the next morning his temperature was normal, pulse 100, rigidity and conjugate deviation much less marked, and he was able to answer some questions rationally. His condition did not alter much during the next twelve days. He was restless, slept little,

cried out at times, was conscious at times, difficult to feed, constantly picking either at bandages over dressings or the right upper teeth—temperature generally normal, and pulse 100. His right upper teeth seemed to trouble him so much that two carious ones were extracted, and the gum lanced over a partly cut lateral incisor—no relief ensued. On June 3rd he vomited several times, screamed out frequently, and became less conscious.

The next day, June 4th, he was more comatose—temperature 98.2°, pulse 108 at 9 a.m., 80 in the afternoon. An exploratory trephining was performed, and a large temporo-sphenoidal abscess, containing about six ounces of foetid pus, was found and opened. His pulse at once rose from 80 to 100, and his temperature to 100°, and some improvement gradually followed, and two days afterwards he was again able to answer some questions coherently. He maintained this improvement—temperature generally 99°, and pulse 100—until June 10th, when he again became more comatose and weaker, and as the abscess cavity was foetid and sloughy, gentle syringing with warm izal solution was ordered twice daily. Some temporary improvement followed. On the 13th there was marked hernia cerebri, and during the syringing, which was very carefully performed, the boy became somewhat collapsed. Two hours later there was a transient but marked rigor—temperature 103.6°, pulse 88. He subsequently improved somewhat, but grew worse the following day and died on the 15th, the temperature rapidly rising before death to 106.6°, and the pulse to 160.

Post-mortem.—Meningitis of base of brain, most marked about pons, and extending some distance down spinal canal, along both sylvian fissures, and under surface of cerebellum. Whole of right temporo-sphenoidal lobe very soft and breaking down, the lateral ventricle being filled with watery foetid pus. The lateral ventricle of left side also filled with thin pus, and brain matter around, especially anteriorly, soft and breaking down. Cerebellum normal. No secondary abscesses.

Case 5. *Chronic Suppurative Otitis Media; Septic Lateral Sinus Thrombosis; Suppuration along Course of Internal Jugular Veins; Secondary Brain Abscesses; Operations; Death.*

W. W., aged nineteen, was admitted into the Queen's Hospital on September 21st, 1896, under the care of Dr. Foxwell, by whom he was subsequently transferred to my care, having been sent in as a case of typhoid fever.

About ten years ago he fell down and hurt his head, and subsequently had a discharge from the right ear, which, with short periods of intermission, had continued to the present time. He was able to work until a month ago; then the discharge became more profuse, and he suffered from pain in the frontal region at night. He remained in bed, but became worse. There had not been any vomiting, but there was a history from the friends of several fits and two rigors. Ten days ago a painful swelling was noticed below the right ear, which increased and became more painful.

There is a foul discharge from the right ear, the temperature is 103°,

pulse 84, tongue very foul and covered with thick white fur, knee-jerks absent, no paralysis, double optic neuritis.

On the 24th fluctuation was detected in the swelling in the neck, and he was seen by me on the 25th. An incision was at once made, and some ounces of very foul pus evacuated. For two days after this he was more comfortable, but his temperature kept high, and on the 27th he had a rigor, his temperature rising to $105^{\circ}2$. Although there was no recurrence of the rigors, he kept in an unsatisfactory condition—temperature varying from 98° to 105° , pulse from 70 to 100. On October 2nd the abscess cavity was explored, with a view of ligaturing, and removing, if necessary, the right internal jugular vein; but no trace of it could be found, and it was concluded that it had been destroyed by the suppuration. His subsequent condition became more unsatisfactory, and it was deemed advisable to further explore. He was therefore trephined on October 14th over right temporo-sphenoidal lobe, and both this and the cerebellum carefully explored with a needle. No abscess cavity was found. A crown of bone was then removed to open both the mastoid antrum and lateral sinus. The former contained a small quantity of caseous pus, the latter a blood clot. The opening was packed with iodoform gauze.

There was little change in the patient's condition after the operation; if anything, he was more irritable and restless, and refused food. There was no further vomiting. He gradually sank and died on the night of the 15th.

Post-mortem.—No trace of the right internal jugular vein could be found. The sinus was thrombosed with blood clot, which had not become organized. In the white matter of the brain there were eight small abscesses found, evidently secondary; none elsewhere.

Looking at these cases, it is evident that the first three practically form a group of uncomplicated abscess of the temporo-sphenoidal lobe, and that a fairly accurate diagnosis was possible.

The symptoms in favour of the diagnosis were:—

1. A long history in each case of the chronic purulent ear trouble—twenty-five years, fourteen years, and nine years respectively.
2. No mastoid tenderness (except in Case 3) and no tenderness on percussion over the sigmoid sinus.
3. No thrombosis of the internal jugular vein.
4. No high or greatly varying temperatures, and pulse not rapid.
5. Absence of pyæmic symptoms, other than the two rigors in Case 3.
6. Cerebration little affected in the early stages, but becoming slow later.
7. Marked emaciation.
8. A chronic course terminating in coma.

In favour of the abscess being temporo-sphenoidal rather than cerebellar:—

There was no occipital headache, no marked vomiting nor disturbance of equilibrium, no sensory aphasia, and no implication of the sixth nerve.

Apart from the non-implication of this latter nerve, the neuritis present in the several cases did not much assist the diagnosis, but it is note-

worthy that in three of the cases the fifth nerve was early involved, and that the aid of a dental surgeon was sought to eliminate a possible dental cause of the pain.

In Case 4 the diagnosis was septic basal meningitis, and this was probably correct, though from the sudden onset it is just possible that a latent abscess may have burst into the lateral ventricle. There was no sudden change in the symptoms during the subsequent progress of the case to indicate that this had taken place.

Case 5 was primarily a septic thrombosis rapidly extending down the jugular vein and destroying it by suppuration. The brain abscesses were secondary and pyæmic, and could not have been discovered by operation.

With regard to the time at which trephining is generally performed, commencing coma still seems to be the signal for surgical action, and that it is not a too-late one is shown by the complete and rapid recovery of these and other similar cases.

The question is, Can we anticipate this time with a reasonable hope of success? The experience of the first three cases leads me to hope that an exploratory operation might with advantage be undertaken without waiting for coma in all cases presenting a series of symptoms similar to those here recorded.

If there is much doubt as to the location of the abscess—temporo-sphenoidal or cerebellar, or possible implication of the sigmoid sinus—the method suggested by Mr. Percy Dean should be followed, and a crown of bone removed one inch and a quarter behind and a quarter of an inch above the centre of the external meatus, through which all these regions can be explored. I need hardly say that if there is any mastoid tenderness the antrum should always be opened first, and the surrounding parts carefully examined for any evidence of extension from this cavity. It is interesting to note that two of the cases had been under careful treatment for the aural condition for years, and that the possibility of intracranial complications had been discussed, as also the advisability of a mastoid operation as a preventative measure, which, unfortunately, had not been accepted by the patients.

The cases very forcibly show the importance—or rather the necessity—for a mastoid operation in all cases of suppurative middle ear disease that do not yield to careful treatment by ordinary methods.

Mr. C. A. BALLANCE read a paper *On Twelve Fatal Cases of Intracranial Otitic Lesions*.

Dr. MILLIGAN begged to congratulate Mr. Ballance upon his valuable communication, and for the very interesting remarks he had made with reference to certain pathological conditions found in the cases he had narrated. With regard to the use of antistreptococcic serum, he said that he had only had the opportunity of using it in one case of septicæmia following chronic suppurative middle ear disease, and he regretted to say that it had not proved of the slightest value—the high temperature persisting, and being uninfluenced in any way by the injections. He could not, however, say that in the case spoken of other organisms besides streptococci did not exist in the discharge.

Dr. J. LUNN said :—I think we all must congratulate Mr. Ballance on his excellent practical paper, and I am much indebted to him for the **post-mortem* notes of his fatal cases. I suppose we all have had difficulties in diagnosing cerebral abscesses. I had a *post-mortem* the other day on an empyema case I had operated upon, who got quite well, and suddenly he was taken with frontal headache and died comatosed. He had had no cerebral symptoms during life, and we found a large old chronic abscess in the right temporal lobe, which apparently had burst; and also other similar cases I have seen in the *post-mortem* room. I think the suggestion of Mr. Ballance of fastening the jugular vein to the skin incision might be very useful, and certainly is a very practical hint.

Mr. MARSH was sure that all present had derived valuable information from the narration of so remarkable a series of cases by Mr. Ballance. He had not much to add to the views he had just expressed in his paper on cerebral abscess. The difficulties of diagnosis, especially in localized suppurative meningitis and in some cases of sinus infection, were very great. One of the most difficult cases he had encountered was a case (fatal) of circular sinus infection, possibly by a small meningeal vein, where he had in vain explored the lateral sinus. On behalf of the Association he thanked Mr. Ballance for coming and giving them such a valuable communication.

Traumatic Rupture of Tympanic Membrane.

Mr. STGEORGE REID read the notes of a case of a child, aged nine years, who whilst playing on the banisters, fell into the hall beneath, striking the chin and bruising the body, the head itself receiving no injury. The child was not unconscious and was simply placed in bed; shortly afterwards, however, a small quantity of blood was found to be oozing from the left ear. On examination, there was seen to be no bruising or tenderness about the scalp; the point of the chin was swollen and great pain was complained of at any attempt to move the jaw; there was very slight oozing of blood from the left exterior meatus. By the speculum the meatus was seen to be normal, the membrane injected, and an elliptical perforation in the direction of the fibres in the posterior half of the membrane, with gaping red edges; there was slight deafness on that side. Up to the time of the accident there had been no trouble whatever with the ears.

After a couple of days the deafness disappeared, but considerable pain was complained of, which continued at intervals for some days. The perforation does not seem inclined to heal very readily, but otherwise the child is in good health without any sign of head mischief.

He thought the notes of the case might be of some interest as instancing an unusual cause of rupture by indirect violence.

LARYNGOLOGY AND RHINOLOGY.

Lupus of Nose. A case was shown by Mr. ATWOOD THORNE for the PRESIDENT.

Black Patch of Pigmentation on the Soft Palate. A man, aged fifty, was shown by Mr. ATWOOD THORNE for the PRESIDENT.

The patient had noticed the discoloration four years previously, and was uncertain whether it had increased in size or not. The patch was not raised, caused no trouble, and was only discovered in the routine examination of the mouth. The degree of pigmentation had not altered.

Multiple Papilloma of Larynx.

Mr. F. MARSH showed a patient, aged thirty-six, who for seven years had suffered from aphonia, and latterly from aching pain in the throat after use of voice, which was now a hoarse whisper. At the first onset two papilloma on the true cords had been diagnosed by a specialist, who advised him not to have them removed for fear of recurrence in a malignant form. This advice was followed until four months ago, when he was first seen by Mr. Marsh. There were then two bunches of papillomata on each of the true cords at about the junction of the middle and anterior third, a line of them along the left false cord extending to the top of the arytenoid cartilages, and a similar but not quite a continuous line on the right false cord. A spray of pure rectified spirit had been used with some slight benefit, and removal by thyrotomy was contemplated as the patient was not willing to submit to intralaryngeal removal.

Dr. MILLIGAN said that he would be disinclined in the first instance to perform a thyrotomy for the removal of the papillomata in the patient shown by Mr. Marsh. He would be more inclined to try the effect of touching the growths with the galvano-cautery, as the patient's larynx was a particularly roomy one and very easy to examine.

Malignant Disease of Tonsil in a Syphilitic Patient.

Mr. WYATT WINGRAVE showed a man, aged forty-eight, suffering with ulceration (malignant) of the right tonsil extending to the fauces, pillars, and tongue.

It commenced about fourteen months ago as a small sore on the tonsil, and was thought to be of a syphilitic nature by the patient, since he had contracted a hard sore several years previously; in fact, from three months after the chancre had never been quite free from sore throat. A portion was removed, and microscopic examination showed simply small-cell tissue. Under pot. iod. it nearly disappeared; but seven months ago it commenced to enlarge, and further microscopic examination showed well-marked stratified epithelioma. He has but little pain, and has only lost 4 lb. in weight during fourteen months. The family history was good, but the patient had been a great smoker and drinker.

Dr. MILLIGAN suggested the injection of pyoktannin, and cited a case in illustration, where a mass had disappeared which exhibited all the clinical appearances of malignancy.

Mr. MARSH said the case was another illustration of the frequency with which epithelioma supervened on tertiary syphilitic ulceration in the buccal cavity.

Malignant Disease of Larynx.

Dr. FURNISS POTTER showed a man, aged sixty-four (previously exhibited at the Laryngological Society of London).

On laryngoscopic examination the left side of the larynx was seen to be occupied by an infiltration, involving the arytenoid region, the ventricular band, and the aryepiglottic fold; the left vocal cord was invisible and the crico-arytenoid joint appeared to be fixed.

There was no history of syphilis. The only symptoms complained of were hoarseness for nine weeks previously, with slight pain occasionally shooting into the left ear; there was no dysphagia, but slight stridor occasionally. Iodide of potassium had been taken in doses increasing to grs. xx., but with no appreciable effect.

Mr. F. MARSH thought that as this growth was not of long duration, was as yet limited within the walls of the thyroid cartilage, and as there was no evidence of glandular infection, there was a reasonable chance of a complete extirpation, and that therefore an excision should be performed.

Dr. MILLIGAN said that he would be disposed to attempt a thyrotomy in the patient shown by Dr. Potter. In the event, however, of the extent of the laryngeal disease being found very much greater than appeared as seen by the laryngeal mirror, he would advise that a partial excision of the larynx should be accomplished. It seemed to him a case in which it was justifiable to attempt an operation.

Recurring Parotitis in a Healthy Child. Notes of a case communicated by FAYETTE C. EWING, M.D. (St. Louis, Missouri).

Ephraim M., son of the writer, since the second year after his birth has been subject to recurring attacks of swelling and inflammation of the parotid glands, apparently idiopathic. The swelling has always manifested itself suddenly, as a rule developing to its fullest extent during the night, with little or no constitutional symptoms. With one exception it has been unilateral. These attacks have occurred at irregular intervals of a few months to a year, becoming notably less frequent as the child has grown older. They are attended with pain on pressure and mastication, but it is never intensely acute.

There has been no attendant enlargement of the lymphatics, nor the slightest hypertrophy after subsidence of the acute symptoms. These swellings have always disappeared without treatment within three days, generally decreasing somewhat in twenty-four hours. Fever has been absent. The subject is a vigorous boy, aged eight, and considerable of an athlete for his years. His tendency to out-door sports and daring caused him to get his limb crushed two years ago. The lower third of the femur was comminuted for six inches, and the ligamentum patella ruptured, but he made an easy recovery, with some shortening. He has never been specially subject to colds, nor shown the catarrhal diathesis. Family history good, phthisical history confined to two great-aunts. He will be remembered by Dr. Dundas Grant, who removed his hypertrophied tonsils during the writer's stay in London, 1893. There were no adenoids. The last return of the swelling was on the left side six months since. To confirm my diagnosis that the swelling did not affect the lymphatics, I took him to Dr. P. Y. Tupper, one of the leading surgeons of this city, who fully acquiesced in my opinion. Numerous and the

latest standard works on general surgery and pediatrics have been consulted to find some mention of conditions to parallel this, but with negative results. The nearest approach are probably the five "obscure" cases reported by Raymond Johnson ("Lancet," April 18th, 1896). He clearly eliminates as an etiologic factor, mumps, enlarged lymphatics, calculus, and the sympathetic parotitis of pyæmia, typhoid, and the complicating swellings of abdominal diseases and injuries, emphasized by Mr. Stephen Paget, which are due to the inflammation of the lining of Steno's duct.

In Mr. Johnson's cases the gland was tender to touch, but not acutely so ; it was also hard and occasioned discomfort in mastication.

The ages ranged from fifteen months to thirty-three years. In several slighter cases the socia parotidis alone was affected, and in one case it was attacked first. The conclusion was that the swellings were due to the inflammation of the lining membrane of Steno's duct, preventing the outward flow of the secretion. The case herein reported resembles the Johnson cases in its behaviour and obscure origin, being evidently without connection with the ordinary and well-known causes of parotid inflammation.

Without feeling justified in a positive opinion, the writer is inclined to consider this a case of simple infectious disease of the duct of Steno (said duct probably extra patulous), causing swelling of the gland, by a microbe the identity of which is unknown.

In the "*Journal de Méd. de Paris*," January 1st, 1896, Regnier Surgeon to the Laribiosière, reports three cases of infection through Steno's duct, but with accompanying constitutional disease, and points out the fallacy of considering parotid inflammation as invariably caused by secondary inflammation of the lymphatic glands. The glandular pockets are infected, the result of inflammation of the canaliculi. The inflammation originates in the mouth. Chassaignac was the first to direct attention to this variety. He declared it to be canalicular. Virchow and Weber also observed cases where pus and lesions were in the canals and alveoli. Croq, as far back as 1873, attempted to prove that all parotid inflammations, with a general cause, are secondary to some inflammation in the mouth which extends to the gland. More recent histologic and bacteriologic researches of Dupré and Claisse are confirmatory of this position.

We may justify this supposition by our knowledge that the liver, kidneys, and breasts may be infected through their secretory ducts. Further, we know that an abscess is most likely to occur in cases of lymphatic origin, while the knife will bring little or no pus at the time when the inflammation is in the glandular pockets, though it may be pressed out later. Duplay's work on pathology affirms that infection may arrive by way of the lymphatics, but in such event it is not the parenchyma of the gland, but the lymphatic ganglia that are affected. Since the abscess resulting from lymphatic infection always shows pus on opening, it is important to consider the location when diagnosing. We herein conclude that infection may reach the parotid glands, either

by way of the lymphatics or through their excretory canals. In the one case we have Chassaignac's canalicular parotid inflammation or acinous adenitis, and in the other simple adenitis.

The mildness of the attacks, in the case here reported, is taken to mean that the pathologic process never advanced to pus formation. Hence the designation above, "simple infectious." The unusual good health, absence of fevers and constitutional disturbance, mildness and rapid subsidence, absence of concurrent affection, and repeated recurrence, seem to render the case worthy of discussion.

SOCIETY OF LARYNGOLOGY, OTOTOLOGY, AND RHINOLOGY OF PARIS.

November 12th, 1897.

("Arch. Internat. de Laryng., Otol., Rhinol.," Nov., 1897.)

M. MARTIN, *President, in the Chair.*

M. MALHERBE exhibited instruments employed in clearing the mastoid in otitis sicca.

A Sign of Thrombosis of the Superior Longitudinal Sinus.

M. LERMOYEZ recorded the case of a woman of thirty, in whom acute cerebral symptoms occurred on the exacerbation of a long-standing suppurative otitis media. When first seen by the speaker, evidence of septicæmia, with thrombosis of the right jugular vein and lateral sinus, was present. During the night preceding operation a new symptom developed. All the veins of the scalp had become considerably dilated, without participation of those of the face. The veins forming this caput medusæ were not tender nor thrombosed. On operation a subdural abscess was found, and an extensive purulent thrombosis of the lateral sinus. Death followed in a few hours, and at the autopsy the septic thrombosis was found to pass centralwards down the jugular vein, while peripherally it extended to the torcula herophili. At this point the clot changed its character, and a recent non-infected fibrinous coagulum filled the superior longitudinal sinus as far forwards as the entrance of the anastomatic veins of Trolard. From this point forwards the vessel was free. The left lateral sinus was also filled with fresh clot. The caput medusæ was evidently produced by the return of cerebral blood through the veins of the diploe and scalp.

Disorders of the Voice, of Naso-Pharyngeal Origin, occurring in Singers.

M. A. COURTADE drew attention to vocal impairment, particularly in the higher notes of the compass, dependent on slight divergence from the normal condition of the mucous membrane of the post-nasal space—divergences which were passed unnoticed by those who only employed the middle tones of the compass.

M. CASTEX was glad to hear this recognition of nasal disorders as the cause of vocal trouble.

M. LERMOYEZ affirmed that not only the function of the larynx, but its anatomical condition, was to be altered by nasal treatment. He had seen a nodule on the vocal cord disappear after removal of a septal spur.

Early Œdema in Secondary Syphilis of the Larynx.

M. LACROIX : Although œdema often accompanies the ulcerations of late secondary syphilis, a laryngeal œdema unassociated with ulceration, and occurring early in syphilis, is exceedingly rare.

The case is reported of a young woman who presented herself a few months after marriage with dysphagia due to œdema of the right ary-epiglottic fold. A month later the dysphagia was extreme and the œdema much increased. The fold, now one centimètre in diameter, was of a pale colour, and resembled a typical tubercular lesion. The rest of the larynx was normal, and no ulceration was present. The tonsils were red and swollen and covered in parts by false membrane. In spite of sedative treatment, carried on during three weeks, no improvement took place, and it was not until the end of that period that syphilis was diagnosed, from the presence of some typical skin lesions.

After the first few doses of mercury the dysphagia ceased, and the cure was rapid, though the laryngeal œdema was the last lesion to disappear.

Orthoform as an Analgesic and Antiseptic. Its Action in various Forms of Dysphagia.

MM. LICHTWITZ and SABRAZÈS conclude from their own experiments that, as an antiseptic, orthoform has but mediocre qualities, but that as an analgesic it is a drug of the first importance. It appears to be non-toxic, and when dusted on to tuberculous ulcers, etc., it produces an analgesia which lasts for one and sometimes two days. This is in part due to the relative insolubility of the drug. A few instances are given of the successful employment of the drug.

1. *A Case of Tubercular Infiltration and Ulceration of Epiglottis, etc., causing Intolerable Dysphagia; Swallowing of Fluids followed by Fits of Coughing, etc.*

Two minutes after insufflation of orthoform powder fluids were drunk with comfort ; no dysphagia twenty-four hours later. On several occasions the action has lasted two days.

2. *A Case of Epithelioma of the Arytenoid Region ; Intense Shooting Pain on Deglutition.*

Insufflation of orthoform gave relief, which on each occasion lasted two days.

3. *After Removal of Tonsils* with galvano-cautery the parts remained insensitive two hours after insufflation with orthoform. Repetition of insufflation reproduced the analgesia.

Ernest Waggett.

TWELFTH INTERNATIONAL MEDICAL CONGRESS,
MOSCOW.

August, 1897. (*Concluded from page 147.*)

Dr. CASTEX *in the Chair.*

Dr. GOODALE (Massachusetts). *On the Absorption of Foreign Substances by the Fauical Tonsils in the Human Subject, with Reference to the Origin of Infectious Processes.*

Conclusions.—1. Absorption exists normally in the tonsil, and takes place through the mucous membrane of the crypts.

2. The path of absorbed substances in the tonsil is in the interfollicular lymph spaces in the direction of the larger fibrous trabeculæ.

3. During the process of absorption foreign substances encounter phagocytic action on the part of the polynuclear neutrophiles situated in and adjoining the mucous membrane.

4. Bacteria are normally present in the crypts, but are not—at least, ordinarily—demonstrable in the tonsillar tissue.

In view of the preceding facts, the supposition appears possible that bacteria may be continually making their way into the tonsillar tissues, but at the moment of entering ordinarily encounter conditions which terminate their existence.

Furthermore, since it is not necessary for bacteria in acute lacunar tonsillitis to occur in the tonsil outside of the crypts, the possibility is at once suggested that the inflammation of the tissues may be due to the absorption through the mucous membrane of irritating toxines formed in the crypts as in a culture tube.

Finally, while in some cases acute lacunar tonsillitis may, as by Fraenkel's hypothesis, arise from a primary infection of the nasal mucous membrane, yet the possibility is shown by these experiments that the tonsils may also become directly infected through the fluids of the mouth. A corroboration of the theory of nasal origin of the so-called "traumatic angina" is perhaps to be found in the fact that in some of Fraenkel's histological examinations of this affection bacteria were found in the tonsillar tissue—even in the follicles themselves—regions which, as demonstrated by the writer's experiments, substances absorbed through the mucous membrane from the crypts tend to avoid.

Dr. R. KAYSER (Breslau). *On the Retention by the Tonsils of Foreign Bodies.*

In order to recognize the importance of the pharyngeal and nasopharyngeal tonsils as entrances for infectious processes, it seems, at first, necessary to describe how these structures act against inorganic foreign bodies.

I have for this purpose blown dust, particularly fine coal dust, against the tonsils of man and animals (cats), and after a short time removed

these. Microscopic examination of these by my assistant, Dr. Hendelssohn, gave the following results :—

1. After a quarter of an hour, numerous fine particles were found in the interior of the tonsillar tissue under the epithelium.
2. The longer the time that elapses, the deeper are the particles found in the adenoid tissue, while they are less numerous superficially.
3. The dust particles are found partly in the cells (leucocytes), partly in the tissue spaces.
4. In animals, after a certain time, dust particles were found in the lymph glands.

MAX SCHEIER (Berlin). 1. *On Probing the Frontal Sinus.*

Probing of the frontal sinus is always a much disputed question. Opinions are very various of the percentage in which probing is possible. Many assert that it can be done *per vias naturales* in most cases, while others assert that it is very difficult, and almost impossible. Till lately no one could say with certainty whether it was really in the frontal sinus or in cells placed high up in the ethmoid. The Röntgen rays now enable us with certainty to say whether the probe has passed. The author has probed the frontal sinus in thirty cases without selection, except excluding cases of empyema of the frontal sinus. In five cases the probe passed, as proved by the X rays. In one case where he thought the probe was in the frontal sinus, the transillumination showed it in the ethmoid cells.

2. *The Use of Röntgen Rays for the Physiology of Voice and Speech.*

The author was the first to intimately study the movements of the palate in speech by means of X rays on a screen of the double cyanide of barium and platinum. When the head is transilluminated one sees the naso-pharynx and pharynx as light shades on the screen, bounded behind by the dark image of the vertebral column. If the person examined phonates, one sees how the palate rises, and is placed in different positions according to the vowel pronounced. The author rejects the other methods which have been previously used to study the movements of the palate. The only perfect method free from objection is where one can study (with the eye) directly the movements of the palate in speech in healthy men with normal organs. This can be done with Röntgen rays. One sees on the screen how little the palate is raised for A. In E O U I it is successively more raised. It is only slightly raised in nasal speech. It is raised for high tones further than for deep, and for loud vowels further than for lower-spoken ones. One sees the form of the mouth taken by the different consonants, the relative position of the lips to the jaws, the position of the hyoid bone, larynx, and epiglottis. In higher tones the larynx rises and the epiglottis is more upright, sinking again for the lower tones. In falsetto the epiglottis is upright, the larynx is pulled up, and approximated to the hyoid bone.

Dr. JACOBSON (St. Petersburg). *On Nasal Douche and Nasal Irrigation. New Methods of Measuring Respiration in the Nostrils.*

Seeing that, during respiration by the nostrils, the pressure under which the air from the naso-pharyngeal cavity enters the two nasal

cavities is the same for both, and that the time occupied in so doing is also the same, the author remarks that the nasal respiration might be measured by the quantity of air expired. He describes his apparatus for so doing, and he believes that the same measurements could be made by means of the spirometer, only using two instruments. This would also give an opportunity of inspiratory measurements as well, provided the inspiration were taken from the nostrils, and the expiration from the mouth.

Experimental Contributions on the Douche and Nasal Irrigation.—These were made with the cadaver, measuring the pressure by means of the water manometer.

Full details of these papers will be published as promised in a subsequent number.

DISCUSSION.

Dr. COZZOLINO asked what sort of manometer Dr. Jacobson has used in his experiments, as he had always had great difficulty in getting any manometer to work reliably.

Dr. JACOBSON replied that he always employed a water manometer, and found it very satisfactory.

Demonstration by LICHTWITZ. Acetylene Lamp by SABRAZES.

The writer states that if we look over the different methods of illumination it will be noticed they all have their disadvantages. Acetylene light seems to combine all the advantages of the other sources of illumination—such as intensity, steadiness, white colour—and it has little or no inconvenience. The speaker specially refers to a certain form of apparatus of acetylene light, which is less dangerous in nature, and commends this particular form.

CUVILLIES maintained that portable acetylene lamps were quite safe, *e.g.*, those he had shown yesterday.

A discussion between Dr. CUVILLIES and Dr. SABRAZES then took place.

Dr. VON STEIN said that there was no room for discussion, as the whole question of the method of producing acetylene with safety has now been settled by the method of producing it.

Dr. CASTEX (Paris). *Mal-formities and Deformities of the Face.*

The speaker referred to the different causes and conditions of nasal deformities, whether hereditary or acquired. He went on, in the first instance, to consider somewhat briefly the different stages, and likewise hypertrophy and atrophy of the maxillary bone, and the various mal-formities—internal and external—of the nose, including deviations of the septum. He pointed out that the facial appearance so characteristic of adenoid growth might be present without adenoid growths themselves; and he further gave a result of examination of a large number of conditions, as studied in animals and seen in the Natural History Museum, Paris; and while there may be deficiencies here and there in part of the face, the apertures themselves were always present. He then referred briefly to the indications and his methods of treatment.

DISCUSSION.

Dr. BOTEY (Barcelona) described his method of operating on the nasal septum. He had intended showing this instrument to the Section, but unfortunately had lost it on the way.

Dr. MADEUF thought that one reason why septa of the negro were less liable to deviations, etc., than those of the white man was that, owing to the shape of their noses, they were less liable to traumatism than were the noses of whites.

Dr. BAS (Nice) spoke of the advantages of nitrous oxide gas as used in London for septal operations.

Dr. CASTEX, in his reply, said that he could not accept Dr. Madeuf's theory as to niggers. He thought that they were probably even more liable to traumatism than whites. Their straight septa were in keeping with their perfect teeth, etc., *i.e.*, lack of devolution.

Prof. STEPANOFF then declared the Section closed.

ABSTRACTS.

DIPHThERIA, &c.

Tavel.—*Preparation, Preservation, and Application of the Diphtheric Heilserum in the Bacteriological Institute in Berne.* "Corr. Blatt für Schweiz. Aerzte," Nos. 20 and 21, 1897.

THE preparation and preservation of the heilserum has only an interest for bacteriology. With relation to the application the author recommends to use it as early as possible, 500 to 1000 A. E. In mixed infection one ought to make injection of 2000 A. E. But considering how insignificant the accessory effects of the serum are, the author thinks every physician ought to treat the diphtheria by the heilserum, instead of taking remedies which don't have any influence over diphtheria. Only in cases where the diphtheria decreases the physician has the right not to use the serum.

R. Sachs.

MOUTH, &c.

Béault.—*Macroglossia ; Lymphangiectasis of the Floor of the Mouth and Neighbouring Regions, etc.* "Annal. des Mal. de l'Oreille," Nov., 1897.

THE case of an infant who, during the first eruption of teeth, at the age of six months, was noticed to have considerable enlargement of the tongue. Electrolisis was practised by another surgeon during a long period without accident, until at the age of seventeen months the child was brought to the writer with an enormous swelling involving the tongue and the left cervico-facial regions, which had suddenly developed. Respiration and deglutition were obstructed to a dangerous degree, and without delay a large wedge-shaped section of the tongue was removed. The fever present prior to the operation persisted for four days only, and recovery was

uneventful, and in every way satisfactory in view of the symptoms for which it was undertaken. On examination of the mouth a few days after the operation, it was found that the two lateral inferior incisors had come through during the crisis.

At the end of three weeks the child was discharged as cured, but four days later returned with enormous swelling of the left side of the face and neck. Operation was contraindicated by the feeble state of the patient. The fluctuating cervico-facial swelling was punctured, and a large quantity of amber-coloured fluid came away, giving relief to the urgent symptoms. This fluid proved to contain pneumococcus in pure culture, which had presumably gained entrance by the tongue wound. The temperature was high, and bronchitis present. Coincidentally with this crisis the first lower molars erupted. Examination of the portion of tongue removed showed the characteristic appearances of lymphangiectasis, with an admixture of angiectasis. The child is now well, but kept under careful observation in view of the approaching eruption of more teeth.

Ernest Waggett.

Girard.—*Total Resection of the Superior Maxilla without Opening into the Buccal Cavity.* "Presse Méd.," Oct. 30, 1897.

WHERE the soft tissues of the palate are not involved in a new growth calling for removal of the superior maxilla, that bone may be removed entire without allowing the operative cavity to communicate with the mouth. The teeth must be removed some days before the operation. After making a suitable face incision the soft tissues may be elevated from the bone by carefully working from the facial wound. The palate tissues should be elevated beyond the middle line. The author has employed this method in many cases, and the patients have recovered with an unaltered vocal intonation, and have been saved the necessity of wearing a palate plate.

Ernest Waggett.

Krebs.—*What is Pharyngitis Sicca?* "Wien. Klin. Rundsch.," No. 48, 1897.

THE author concludes:—There is no pharyngitis sicca. It is only a name for different kinds of diseases. Then he mentions different cases which are falsely named pharyngitis sicca.

R. Sachs.

Röpke.—*Etiology of Acute Osteomyelitis of the Upper Jaw in Infants.*

"Munchener Med. Woch.," Jan. 25, 1898.

AFTER referring to four reported cases Röpke described the clinical history of two cases he had observed.

1. A strong boy, fourteen days old, parents healthy, became feverish, with suppuration from the left nasal fossa. Left half of the face became swollen, with oedema of the eyelid; pus escaped through to the hard palate and the canine fossa; later, an abscess was opened on the under wall of the orbit. The crowns of the canine and one molar escaped through the widened fistula in the canine fossa; necrosis of the anterior wall of the antrum, of the lower orbital wall, and of the processus frontalis. Tampons applied to the wounds. Intestinal catarrh eight days later, followed by broncho-pneumonia and death.

2. Boy, seven months old, otherwise healthy, family history good, became feverish, with discharge of pus from the left nostril, swelling of the left side of face and eye. Escape of pus through canine fossa, which was freely opened under an anæsthetic; necrosis of the anterior wall of the antrum with a large sequestrum from processus jugularis. The wound was dressed and plugged daily; smaller and larger sequestra were separated. After nine months there is still a small fistula in the canine fossa; from time to time separation of sequestra. The left cheek is slightly sunken. Boy looks healthy.

The author inclines to the view that infection takes place from the nose. Treatment after free opening should be expectant.

The prognosis is worse the younger the patient. Infants succumb easily to intestinal complications from swallowing infectious pus. *Guild.*

NOSE, &c.

Albers-Schönberg.—*Lupus and X Rays.* "Münch. Med. Woch.," Feb. 15, 1898.

THE author showed two cases of lupus successfully treated by Röntgen rays. In the first case the skin over the nose was affected, and had been unsuccessfully treated by other means. The other case was lupus of the cheek, and of the nasal mucous membrane. The former was; cured the latter was hardly favourably influenced. *Guild.*

Bergeat.—*Antrum of Highmore.* "Münch. Med. Woch.," Feb. 22, 1898.

THE author demonstrated twenty-five preparations of the pathology of the antrum of Highmore from his collection. He considers important the thickness of bone between the teeth and the antrum in the etiology of disease of the antrum. The striking frequency of pus in *post-mortem* examination of the antrum he considers due to disturbance of nutrition in fatal diseases, and should be imputed to weakened constitution. One preparation showed marked decrease in size of the antrum, and a striking asymmetry of the facial bones in consequence of empyema. Spontaneous healing of chronic empyema is proved by the filling up of the antrum with connective tissue; further, by a large perforation through the anterior wall artificially, healing is brought about in an analogous way. Polypi in the antrum are found oftener when the contents are mucous, and not purulent. Mucous cysts are found in thirty per cent. *Guild.*

Burwinkel.—*Inoculation of Syphilis by Lunar Caustic.* "Deutsche Med. Woch.," Feb. 2, 1898.

THE author refers to a case described by Fournier in 1897, where syphilis was communicated to the forearm of a man who was being tattooed. He describes a case, seen by himself, where a man, twenty-four years of age, with syphilitic ulceration of the nose, had the following history. There was no family history of syphilis or tubercle. Patient was quite healthy till he was twelve years old, when he had difficulty in breathing, owing to a polypus in the right nostril. It was cauterized several times with nitrate of silver; since then a spreading ulceration had developed, and led to destruction of the tip, alæ, and side walls of the nose. He had been cauterized and injected with tuberculin without result. Cicatrization followed antisyphilitic remedies. *Guild.*

Hajak.—*Etiology and Diagnosis of the Diseases of the Accessory Cavities of the Nose (the Antrum of Highmore excluded).* "Wien. Klin. Rundschau," No. 46, 1897.

THE author thinks that, considering the variety of known bacteria—diplococci pneum. (Fraenkel-Weishselbaum); staphylococci pyog. aur.; streptococci pyog.; bacill. mucos. capsul.; bacterium coli, etc.—in the accessory nasal sinuses, one is forced to believe that they only predispose to suppuration, the latter increased by some other bacterium already in the normal nasal cavity. Another question is whether inflammations of the accessory cavities are independent diseases, or whether they are only extensions from the mucous membrane of the nose. The author thinks it is certain that some cases of inflammation of the accessory cavities are

produced by a disease of the nasal mucous membrane. Referring to nasal polypi, he thinks it very difficult to decide whether they are able to cause a suppurative disease of the accessory sinuses; but without any doubt their existence is very favourable to the origin and the continuance of suppurations of the accessory cavities. Whether *ozæna* can be the cause of suppurations of the accessory nasal cavities, or whether *ozæna* has only accidental signification, is still quite undecided. In diagnosis of the diseases of the frontal and ethmoidal sinuses there is a great difference between the opinions of the rhinologists on one side and the surgeons and oculists on the other side; but the author thinks the reason of this is that we rhinologists see these diseases from the beginning, whereas the others see them only later on in more advanced stages; and the diagnosis of a latent empyema always wants thorough rhinological science.

The best method of diagnosis of the diseases of frontal and ethmoidal sinus is the examination by sounds. In some cases it will always be necessary to remove the middle turbinate. Very often it is difficult to find out if there is any suppuration of the frontal sinus or the anterior ethmoidal cells. Then one ought to watch if the pus runs out of one or of several openings. At the last the author speaks about the suppurations in the sinus sphenoidalis and in the fissura olfactoria, without bringing anything new.

R. Sachs.

Ischwall.—*Polypes Naso-Pharyngiens.* "Presse Méd.," Oct. 27, 1897.

THE report of the removal of a large naso-pharyngeal polyp, encroaching on the right antrum, orbit, and temporal fossa in a child of fifteen. The attachment to the base of the skull was severed with Doyen's elevator, and the tumour seized with forceps. An incision was then made through the temporal fossa down on to the growth, and, after division of the zygoma with scissors, removal by traction was accomplished. The operation occupied only a few minutes, and recovery was uneventful.

Ernest Waggett.

Koppel.—*About the Frequency and the Reasons of Chronic Catarrh of the Superior Air Passages.* "Petersburg Med. Woch.," No. 41, 1897.

BESIDES all the other reasons of chronic catarrh, one principal one is supposed to be the too dry air in the rooms during the winter time. The rest is not of special interest.

R. Sachs.

Landfs.—*Casual Notes.* "Med. Corr. Blatt der Wurttemb. Aerzte Land. Ver.," Nov. 20, 1897.

THE author reports four cases of nasal stones. One nearly total atresia of the right nasal cavity. One case of two almost symmetric congenital perforations in both arcus glosso-palatini. Eggshell incarcerated in the larynx; removed by forceps; cure. Excessively grown polypus of the ear, covering the concha auris; operation.

R. Sachs.

Lombard.—*Serumtherapy in Ozæna.* "Ann. des Mal. de l'Oreille."

THE author pays particular attention to the accidents which occur in this form of treatment, and concludes that any drawbacks of a serious character may be avoided by using small doses.

He sums up the results of treatment as follows:

1. Complete disappearance or attenuation of fœtor always occurs.
2. Crusts persist, though sometimes diminished in quantity.
3. It is impossible at present to say that good results are lasting. Though of short duration, they are often better than those obtained by douches and cauterization. Children react better than adults.
4. Hypercæmia and swelling certainly occur.

5. He has never observed complete disappearance of Belfanti's bacillus, or Loewenberg's coccobacillus, even during treatment.

6. This treatment is the most convenient method for combatting the foetor, but hopes of a definite cure should not be held out to the patient. In the majority of cases the result will be but temporary.

These conclusions are drawn from observation of Gouguenheim's cases at the Lariboisière Hospital.

Ernest Waggett.

Marcuse, Paul.—*Foreign Body in the Nose.* "Deutsche Med. Woch.," Feb. 2, 1898.

THE patient, a brewer, had complained for several months of foetid purulent discharge from the nose, for which he knew no cause. A decomposing pea of barley was removed, which must have been unconsciously inhaled into the nostril several months before, when sampling grain.

Guild.

Martinez, Emilio.—*Retention Cyst of the Frontal Sinus.* "Arch. de la Policlinica" (Habana), Oct., 1897.

THE author refers to a case which was operated on with satisfactory results. A woman, thirty-seven years of age, complained of crossed diplopia from the left eye, ptosis of the upper lid, external strabismus, and exophthalmos. Examination revealed a small tumour under the upper border of the orbit, rounded surface and soft, which appeared to be the cause of the eye symptoms. It was operated by the eye surgeon, and found to be a mucoid retention cyst from the frontal sinus passing through an aperture in the superior orbital plate.

The case was handed over to the author, and an examination of the nasal fossæ revealed an old atrophic rhinitis with patches of cicatricial tissue. Catheterization of the fronto-nasal duct was unsuccessful—this duct being occluded—and not wishing to expose the patient to the risk of forcing the bougie, retro-catheterization was resorted on. Under chloroform anæsthesia an opening was chiselled in the anterior wall of the frontal sinus, close to its inner end, and an Eustachian catheter was passed through it; holding its beak in the infundibulum, a steel wire loop was forcibly passed through its lumen until it appeared in the nasal fossa. This loop helped to pass a silk thread, which was retained in place, and on subsequent days served to draw an increasing number of silkworm gut threads until the duct was considered sufficiently dilated. The silk loop was withdrawn, and the frontal wound allowed to close.

All symptoms had disappeared as soon as free drainage was established through the fronto-nasal duct. Catheterization through the nasal fossæ was continued for two weeks. The cyst was not infected before nor after the operation. Silkworm gut was found excellent as a progressive dilator by its elasticity, which it retains after twenty-four hours of being placed in the duct; at the same time it is a very good drainage medium. The patient, one year after being operated, had not suffered a recurrence, the fronto-nasal duct remaining open.

Muller, M. (Karlsbad).—*Hay Fever.* Wien. Med. Club, Oct. 20, 1897.

THE author reports a few cases of hay fever with gastric symptoms. So he prescribed Karlsbad waters, and at the same time treated the nasal mucous membrane. The author believes he had good results by this method.

R. Sachs.

Röpke.—*Case of Empyema of the Frontal Sinus with Perforation into the Orbit and Anterior Cranial Fossa.* Congress of West German Throat and Ear Specialists, Nov. 7, 1897. "Munch. Med. Woch.," Jan. 25, 1898.

FOR four years headache above the right eye—repeated removal of nasal polypi. In July of last year patient came on account of unbearable pain in and over the

right eye, sleeplessness, and vomiting. Examination showed nasal polypi on the right side, caries, and suppuration of the ethmoid, suppuration of the right frontal sinus, slowing of the pulse (50-54), marked pain on pressure over the frontal sinus and eyeball, which is neither pushed forward nor impaired in movement, tongue dry and coated, no fever.

Frontal sinus was opened with chisel, and measured vertically 7 cm., horizontally $4\frac{1}{2}$ cm. Perforation on the inner wall with pus and granulations. After removing the granulations the dura mater was exposed; laterally the probe could be passed into the orbit. The wall anteriorly and towards the ethmoid was chiselled through, the thickened diseased mucous membrane was curetted. Since then patient has been well; there is still slight discharge from the large wound. Hopmann reported a similar favourable case.

Lowenstein Eberfeld saw Röpke's case three days before the operation. Examination showed no pus, no swelling; there was only severe headache, which seemed to depend on neuralgia.

Moll referred to the method first introduced by himself for diagnosing pus in the nose; it depended on negative pressure, in which nose and mouth are shut, and one tries to suck. The method serves frequently to establish the diagnosis of frontal sinus empyema. Guild.

Semonsohn, Max.—*Foreign Body in the Nose.* "Deutsche Med. Woch.," Feb. 2, 1898.

A GIRL, four years old, had been treated with cod-liver oil for a supposed scrofulous disease of the nose. There was profuse foetid, purulent discharge from the left nostril; there was also deafness. Examination revealed a mass, covered with secretion, in the middle meatus, which, on removal, proved to be a small piece of hard sponge. The nose was irrigated with saline solution and recovery ensued. Guild.

Stiel.—*On the Connection between Nasal and Ocular Diseases.* "Münchener Med. Woch.," Jan. 25, 1898.

THE connections between nasal and ocular diseases are essentially of three kinds. The first consists of reflex ocular disturbances, lachrymation, photophobia, scotoma, ophthalmic migraine, and especially asthenopia. Even though the direct proof of the connection of subjective ocular disturbances is not easily established from objectively proved nasal disease, yet the practical experience of a connection cannot be disputed. The second consists of an internal connection between the nose and eye, through the direct communication of the conjunctival sac with the nose by means of the tear duct. The lachrymal duct opens in the inferior meatus, and consists of a membranous covering from the mucosa, of sub-mucous and cavernous tissue like that covering the turbinate. Inflammation in the nose, hypertrophy of the inferior turbinate, ulcerative processes, cause swelling of the cavernous tissue of the lachrymal duct with stenosis, and as a result stagnation of tears in the tear duct. Bacteria increase and cause inflammation of the tear duct walls, producing dacryostenosis and dacryocystitis. As a result preliminary treatment of the nose should precede probing and washing out of the tear duct. The third consists in the respective connection between nose and eye. The contents of the orbit which are surrounded by the accessory sinuses of the nose, so that inflammation of these, owing to their thin walls, can easily spread to the eye. Every gradation from simple collateral hyperemia to orbital abscess and cellulitis has been observed. It has been proved that orbital abscess is usually secondary to disease of the antra.

There is displacement of the eyeball in the opposite direction from the situation

of the abscess, disturbance of movement and pain. The reverse may occur; inflammation from the eye may spread to the nose. This is rare.

Discussion followed. Hirschmann stated that Nieden, Ziem, and Bresgen were the first to point out the connection between nasal and ocular diseases. Reflex affections are very common; asthenopia diminishes after removal of adenoids. He describes a case of bitemporal hemianopsia, which was due to disease of the sphenoid. It was probably due to an exostosis which pressed on the chiasma of the decussated bundles of the optic nerve, for the patient showed exostoses on the vertex. Death was due to disease of the lungs, but no *post-mortem* could be obtained.

Hopmann stated that many cases of disease of the naso-lachrymal canal, as well as phlyctenular conjunctivitis, were treated unsuccessfully by oculists, because the nose was neglected. In a case of Basedow's disease the symptoms became less after the removal of a nasal polypus and treatment of atrophic rhinitis.

Hirschmann pointed out the importance of the vascular connections between the nose and the eye. Branches of the ophthalmic artery and ethmoidal arteries (ante and post) go to the nose, and the nasal veins communicate with the ophthalmic veins. The principal reflex disturbances are changes in the field of vision, disturbances of accommodation, fleeting scotoma; the nasal causes are hypertrophy of the inferior turbinates and adenoids.

Lieven reported a case of synechia of the inferior turbinate, where there was ciliary paresis and frequent pain in the eyeball; violent coughing was produced on pressure. After removal the symptoms disappeared. *Guild.*

Winkler.—*About Fever after Operations in the Superior Air Passages.* "Wien. Klin. Rundsch.," No. 52, 1897.

AFTER cauterizing, or galvano-caustic treatment of the turbinated bone, operation of tonsils or adenoids (tonsilla pharyngea), in 47 children out of 120 there were observed various degrees of fever. The author thinks the reason of the fever is either an infection of the wound or the swallowed blood, which, in some cases, might be able to produce the fever. To avoid the fever the author proposes a thorough disinfection of the instruments, and no injections in the nose after the operation. If there is any intense, non-purulent secretion, the author recommends an injection of a solution of natr. chlorate before the operation. *R. Sachs.*

LARYNX.

Bar.—*Malignant Disease of Larynx in a Tuberculous Subject.* "Arch. Inter. de L., O., R.," Nov. and Dec., 1897.

THE case of a woman of sixty-five, with evidence of pulmonary disease and tubercle bacilli in the sputa. A small, smooth, elastic, sessile tumour was seen on the left ary-epiglottic fold. A diagnosis of malignant disease was made, but any surgical interference was refused. Eight months later the patient was again seen, with the pulmonary mischief in a dormant condition. The left side of the larynx was now extensively infiltrated with malignant disease, and death followed. No *post-mortem* examination appears to have been made. *Ernest Waggett.*

Bergmann.—*Cancer of Larynx and its Treatment.* "Petersb. Med. Woch.," No. 46, 1897.

DEMONSTRATION of four patients in whom successful extirpation of the larynx was performed on account of cancer. The author concludes that the results of

excision of the larynx are much more successful than some authors report. For instance, of five complete excisions on account of cancer, he only had one death. The principal thing is to perform the operation as early as possible. Further, the author mentions Fraenkel's nine cases of cancer of the larynx, in which he advocates the intralaryngeal method; but, considering that five of these cases have been cured, the author thinks that they must have been very benignant—otherwise there would not have been such a good result. In conclusion, the author says the most certain method of surgical treatment of laryngeal cancer—also in its earliest stages—is laryngotomy. *R. Sachs.*

Berthold.—*On Sudden Death in Children, especially Infants.* "Archiv. für Kinderheilkunde," Vol. XXIV., Part III., 1898.

IN 1879 Baginsky described a case with *post-mortem* appearances where sudden death was due to pressure on the trachea by an enlarged thymus. Grawitz has described two cases—one six months, the other eight months old—where, in otherwise healthy children, death occurred suddenly, due to pressure of an enlarged thymus on the trachea.

Berthold has seen four similar cases. He refers to the different causes of enlargement of the thymus, but emphasizes a simple genuine hypertrophy, which runs a latent course, unlike the other forms, and occurs in strong and healthy children. In these, sudden acute asphyxia occurs, face becomes a deep bluish-red colour, the hands are spasmodically closed, child dies without a cry. He quotes two cases described by Thomas in Freiburg, and Kopp. In Kopp's case there was enlargement of all the lymph glands (lympho-chlorosis of Paltauf). He has collected forty similar cases from the literature.

He describes a case in a girl, two and a half years old, operated on by Rehn, where tracheotomy was performed without benefit owing to great difficulty in breathing; later, the anterior mediastinum was opened, and the enlarged thymus brought forward and stitched to the fascia on the anterior side of the sternum, allowing the tracheotomy tube to be removed, and recovery ensued. He points out the importance of such cases from a medico-legal point of view.

In conclusion, he points out that an idiopathic hypertrophy of the thymus may alone cause death in infants; that a swollen thymus gland plays an important part in connection with rickets and the status lymphaticus in sudden death in children. That also an acute, perverse, lordotic bending of the neck may compress the trachea and cause asphyxia. He advises operation in the way of partial resection of the thymus when hypertrophy has been diagnosed. *Guild.*

Chiari, O.—*Polypus of the Epiglottis.* K. K. Gesellsch. d. Aerzte in Wien, Oct. 22, 1897.

DEMONSTRATION of a microscopic preparation. The operation for removal of the polypus was rather difficult through its situation on the pars posterior of the epiglottis near the superior edge. *R. Sachs.*

Chiari.—*Double Paralysis of the Recurrent Nerves.* "Wiener Klin. Woch.," 1898, No. 5.

A MARRIED woman, aged forty-six, had difficulty in swallowing, hoarseness, but no difficulty in breathing; the left vocal cord was in the cadaveric position. Later a flat tumour developed on the left sinus pyriformis, then total aphonia resulted from paralysis of both recurrents. The patient died after gastrostomy. The *post-mortem* showed carcinoma affecting the œsophagus and larynx. Both recurrent nerves were destroyed by carcinomatous growth, from which depended that the abolition of conduction in these nerves caused cadaveric and not adduction position

of the vocal cords. Chiari deduced from the appearance that it is quite the same whether the crico-thyroid muscle is affected or not. In adults these muscles cause no noticeable adduction of the vocal cords. *Guild.*

Gaudier.—*A fresh Case of Cyst of the Epiglottis, with Microscopic Examination.*
"Echo Méd. du Nord," Sept. 25, 1897.

THE case of a man who had been under careful observation, and who, indeed, had undergone tracheotomy for a tertiary syphilitic stenosis of the glottis. One month after leaving hospital, when the epiglottis was normal, the patient returned with a red cylindrical tumour, three-fifths of an inch in diameter, springing from the anterior aspect of that organ. This was removed with scissors, and proved to contain a pus-like fluid, which, unfortunately, was lost. On microscopic examination the thin fibrous wall of the cyst proved to be lined on both its inner and outer side with ordinary stratified squamous epithelium. Nowhere was any glandular tissue to be found. Apart from the cyst the epiglottis was quite normal.

The pathogeny of these cases (several quoted) is obscure, but the author thinks that the nature of the epithelium in this instance certainly negatives the hypothesis of origin from glandular retention. He inclines to view it as a case of epidermal inclusion-cyst, a small epidermal "rest" remaining quiescent until affected by inflammation occurring in the neighbourhood. *Ernest Waggett.*

Gouguenheim, A., and Guinard, A.—*Surgical Treatment of Lupus of the Larynx.*
"Ann. des Mal. de l'Oreille, du Larynx," etc., 1897, Vol. VIII.

A BOY, ten years old, with a phthisical mother, suffered from lupus of the nose, with hoarseness of two years' duration, which was treated with lactic acid without result. The laryngoscope showed the epiglottis swollen and covered with granulations, and ulceration on the edge with large granulations somewhat obscuring the view of the larynx. Vocal cords were swollen and of a white colour. Breathing was difficult and the patient was aphonic. Operative treatment appeared indicated and was carried out by Gouguenheim. A Trendelenberg's tube was introduced. The thyroid cartilage was divided in the middle line; incision from the cricoid cartilage to the hyoid bone. The epiglottis was completely removed, the granulations were curetted, the ulcers scraped with a sharp spoon, and the thermo-cautery applied. The tube was removed the day after the operation. Healing took place in a short time. Removal of the epiglottis only caused temporary difficulty in swallowing. Voice returned four weeks after the operation. This is the second case of cure after thyrotomy. Surgical treatment of lupus is more hopeful than that of laryngeal phthisis. *Guild.*

Martuscelli.—*A fresh Case of Amyloid Tumour of the Larynx.* "Presse Méd.," Dec. 11, 1897.

THE growth occurred in a young man of twenty, and took the form of a small, red, sessile tumour, scarcely projecting beyond the free edge of the left vocal cord about its centre. Microscopic examination showed it to consist of connective tissue containing many large lymph sinuses. The amyloid degeneration was irregularly distributed in plaques and strings throughout the growth, while independent amyloid bodies, with concentric markings, were present in large numbers. Careful study showed that the degeneration took origin, in part, in the endothelium of the lymphatics. *Ernest Waggett.*

Railton, F. C.—*Multiple Papillomata of the Larynx in Young Children treated by Tracheotomy only.* "Brit. Med. Journ.," Feb. 19, 1898.

Case I. *Cure after wearing a tube forty-five months.*—In this case the patient, a female aged three years and three months, was brought to hospital with well-

marked symptoms of laryngeal obstruction and with chronic hoarseness. The hoarseness had been observed for nearly two years. For some time before admission to hospital she had suffered from alarming attacks of nocturnal dyspnoea. A diagnosis of laryngeal papillomata occluding the larynx was made, although all attempts to obtain a laryngoscopic view of the larynx had failed. The diagnosis was, however, subsequently confirmed by the appearance of growths at the wound sprouting round the tracheotomy tube. Tracheotomy was performed, and after wearing a soft tube for forty-five months the case was pronounced cured, the larynx being quite clear and free from all growth.

Case II. *Cure after wearing a tube twenty-five months.*—The patient, a girl aged four years, was brought to hospital with a history of chronic hoarseness, noisy breathing, and paroxysmal nocturnal dyspnoea. Examination with the laryngoscope showed the presence of laryngeal papillomata. Tracheotomy was performed, and complete cure followed the wearing of a tube for twenty-five months. The author remarks that it was resolved to limit operative interference to a tracheotomy, owing to the unsatisfactory results of thyrotomy in these cases.

W. Milligan.

Rosenfeld.—*Tumour of the Larynx.* "Centr. v. Deuts. Aerzte in Böhemic," Oct. 12, 1897.

THE case of a girl, twelve years old, from whom a tumour was removed from the right plica ary-epiglottica. Microscopical examination proved the growth to be fibro-sarcoma.

R. Sachs.

The Transmission of Functional and Organic Disorders of Speech. "Münchener Med. Woch."

DUMBNESS is the most important organic disorder of speech. In a series of 548 cases 45 per cent. were congenital; of these hereditary evidence was proved in 17 per cent. It was worthy of observation that amongst 1550 children who were the issue of 724 marriages of deaf-and-dumb with healthy ancestry, only 1·3 per cent. were deaf and dumb. In 104 marriages where both parents were deaf and dumb the percentage was 4·6. Racial peculiarity and marriage of blood relations appeared to have no effect. Very different was the report from three American institutions for deaf and dumb, where, amongst 1005 congenital cases, hereditary transmission was noted in 497, *i.e.*, 50 per cent.

Congenital defect in the palate was observed in 287 cases, of which 5·2 per cent. were hereditary. He quotes two interesting genealogical trees from Merke. A healthy couple had eleven children; nine were born dead, two alive with cleft palate; on the father's side there were two with cleft palate. In the other case two sisters married healthy men. Of the one marriage there were six children—three boys with cleft palate, and three girls normal. Of the second marriage were seven children—five boys with cleft palate and two girls without.

The third organic disorder of speech, stigmatismus, shows a great tendency to transmission; 38·5 per cent. were hereditary.

Functional disorders depending on the organs of articulation are very transmissible.

Stuttering was hereditary in 28·6 per cent. of 589 cases.

Stammering was hereditary in 39 per cent. of 152 cases.

In 189 cases 37 per cent. were deaf and dumb due to heredity.

Guild.

ŒSOPHAGUS.

Butlin, H. T.—*On a Second Case of Removal of a Pressure Pouch of the Œsophagus.*
 "Brit. Med. Journ.," Jan. 1, 1898.

IN this interesting communication the author relates the histories of six cases of pressure pouches of the œsophagus which he has seen in his practice. In two of the cases the author removed the pouch with satisfactory results. He believes that the rarity of this condition has been greatly exaggerated. He remarks also that the true pressure pouch is practically always situated at the back of the junction of the pharynx with the œsophagus, and that it opens into the gullet by a longitudinal opening in the middle line about an inch in length. It is more commonly found in males than in females. All of the author's patients were men, and in every one of them the symptoms of the pouch were first noticed after forty years of age. The one constant symptom in every case is the return of fragments of undigested food many hours after the food has been taken. The fragments may be coughed or choked up, and occasionally liquids taken at night will run out, and make the patient cough when he changes his position during the night. Pressure on the side of the neck in the posterior triangle causes fragments of food and liquid to return into the mouth. A bougie is arrested at a distance of about nine inches from the teeth. As a rule it passes into the pouch, and its end may be made to project so that it can be felt and seen in the side of the neck (almost always the left side) behind the sterno-mastoid muscle. Wasting and loss of weight are rarely observed until the disease is very far advanced. The course of the disease is very slow. In all cases in which operation has been performed the relief afforded has been complete and permanent. The author refers to various cases which have been operated upon, and to the method of operation.

W. Milligan.

THYROID, &c.

Bérard.—*Thyroid Fever after Operations on Goitre.* "Presse Méd.," Dec. 29, 1897.

IN order to test the hypothesis that the rise of temperature often seen after operations on goitre was due to absorption of the secretion of the gland, the author injected rabbits with fresh extracts of goitre removed by operation. In every instance a rise of temperature amounting to 1° or 1.5° Centigrade was noted. In some instances tetany and contractures occurred, and lasted for two or three days. Extracts of normal thyroid had a much more transitory action.

Ernest Wazgett.

Doyen.—*Traitement Chirurgical du Goitre Exophtalmique.* "Presse Méd.," Oct. 27, 1897.

A COMMUNICATION made before the French Surgical Congress, in which the author recommends thyroidectomy, which, in his hands, has given complete cure in four cases operated upon.

Ernest Wazgett.

E A R.

Bloch, E.—*The Diagnosis of Perforation of the Drum Membrane.* "Arch. of Otol.," Vol. XII., 1897.

A SURVEY of the various methods of diagnosing perforations of the membrana tympani is given. Special reference is made to the value of the use of Siegle's speculum for this purpose. If the membrane be imperforate, and the air in the meatus be rarefied by Siegle's speculum, the whole membrane (provided there are no adhesions) moves outwards. If, however, the membrane is perforated, no change in its position takes place, as the pressure upon each side of the drumhead remains the same, the rarefaction of the air in the canal causing a corresponding rarefaction in the tympanic cavity.

W. Milligan.

Escat.—*Spontaneous Escape of Cerebro-Spinal Fluid by the External Auditory Meatus. Probable Congenital Fistula.* "Arch. Inter. de L., O., R.," Nov. and Dec., 1897.

A GIRL of ten, with no history of ear disease, traumatism, or foreign body. Eighteen months ago discharges of fluid occurred ten or twelve times a day for two months. After six months' cessation, reappearance of the phenomenon for one month. During the last eight days, return of the symptoms. At the time of examination the parent related that the discharge was preceded on each occasion by a subjective "whistling," which lasted a few seconds and ceased when the flow commenced. On each occasion about a *demiverre* of fluid escaped. The writer estimated that fully half a litre of fluid escaped each day. The flow was particularly free after meals. There was oliguria, but no polydypsia. One hundred and fifty grammes collected at one "discharge" was examined by Prof. Gérard.

Report.—Colourless fluid, slightly alkaline; clouding slightly with heat and acetic acid.

Nacl. 6 gr. 30 per litre.

Earthy phosphates 0 ,, 40 ,,

Traces of cholesterine and albumine.

Undoubtedly cerebro-spinal fluid.

The child seemed in all respects healthy. Hearing in the affected right ear was good, and the membrane and meatus appeared to be normal. The catheter gave no perforation sound or evidence of fluid in the tympanum.

Careful examination with Weissmann's mirror revealed a small V-shaped mark, of a lighter colour than its surroundings, on the roof of the inner third of the meatus. The probe could not penetrate the fistula which presumably opened at this spot. Unfortunately a discharge never occurred in the author's presence, nor could he extract any fluid by the suction action of Siegel's speculum. In order to close the supposed minute fistula in the roof of the meatus, the author employed cauterization of that region, and with the desired effect, for the discharge had not reappeared up to the date of writing. He supposes that there must be at this point a dehiscence not merely of the bone, but of the membranes, and the absence of previous ulceration or traumatism suggests a congenital origin.

Ernest Waggett.

Gellé.—*Acoustic Exercises in the Deaf-mutism of Children of Tender Years.* "Presse Méd.," Oct. 27, 1897.

A RECOMMENDATION of the microphonograph of Duffand, and the commencement of education at a very early age.

Ernest Waggett.

Goldstein, M. A.—*Bilateral Syphilitic Ulceration of the Auricle.* "The Laryngoscope," Jan., 1898.

PRIMARY syphilis of the auricle is a rarity; secondary syphilitic affections of the auricle are, however, frequently met with, especially as an extension to this locality from diseased areas upon the face and neck. Cases of tertiary syphilis of the auricle have been recorded by several observers, especially when due to extension of ulceration from adjoining parts; but the existence of symmetrical tertiary lesions upon the auricles, without any other syphilitic lesion or eruption, has not been previously recorded. In this case the patient was a male, aged twenty-five, who, about seven weeks before applying for treatment, had noticed several small nodular masses making their appearance upon the right auricle. The nodules gradually increased in size, and covered a considerable portion of the concha and lobule. Two weeks later similar nodules appeared upon the left auricle. The infiltration was succeeded by softening and ulceration. After removal of all scabs, three deep, well-defined, kidney-shaped ulcers, with red bleeding surfaces, were found upon the right auricle, and two similar ulcers upon the left.

Six years previously the patient had contracted syphilis. Rapid reduction of the ulcerations followed the administration of fifteen-drop doses of a saturated aqueous solution of iodide of potassium.

A short bibliography relating to cases of syphilitic lesions of the auricle accompanies this paper.
W. Milligan.

Gradenigo.—*On a kind of Physiological Diaplacusis in Rinne's Test.* "Ann. des Mal. de l'Or.," Dec., 1897.

IF deep-toned forks (32, 64, 128 vibrations), which are so made that when vibrating at full intensity they emit no harmonic to be heard by aerial conduction, are applied to the cranial bones, the first harmonic (*i.e.* the note an octave higher) alone is heard, and not the fundamental note. This is constant for a sixty-four-vibration fork, and probably for all notes of the lower three octaves; but it does not occur with forks of a higher pitch.

If a sixty-four-vibration fork is held to the mastoid, the note corresponding to one hundred and twenty-eight vibrations is then alone heard. If a fork of one hundred and twenty-eight vibrations is now brought near the meatus, the two forks are heard in unison. If the higher pitched fork is at intervals approached to and moved away from the meatus, the fundamental tone of the big fork, which was formerly masked by its harmonic, will be perceived by bone conduction.

It is probable that transmission by the osteo-tympanic route favours the higher note at the expense of the lower, and possibly the phenomenon last mentioned may be explained as one of fatigue.

This much is certain, that carefully made and weighted forks do give out harmonics, though they may not be perceived by aerial conduction.

Ernest Waggett.

Gruber, F.—*Paracentesis of the Membrana Tympani. Contribution to the Treatment of Otitis Media Exudativa.* "Wien. Klin. Rundsch.," 1897. No. 42.

THE author performs paracentesis in the following manner:—Incision is commenced at the posterior superior quadrant of the membrane in the shape of a bow, about one to one and a quarter millimètre distant from the edge of the meatus externus, through the posterior inferior quadrant as far as the anterior quadrant. A movable flap of membrane is thus made, past which the exudation can easily go.

R. Sacks.

Heiman.—*Treatment of Certain Mortal Complications of Purulent Otitis and Otitic Pyæmia.* "Ann. des Mal. de l'Oreille," Nov., 1897.

THE diagnostic difficulties are so great that the author considers the ordinary mastoid operation insufficient where aural suppuration is complicated with fever and pain localized mainly in the occipital region, and when these symptoms have resisted treatment with drugs and revulsives. When these conditions exist he has made it a practice for some years past to open the cranial cavity behind the mastoid wound. When in addition there is evidence of general infection (rigors, weakness, articular pains, etc.), he practises diagnostic puncture of the lateral sinus. In no case has he met with accident attributable to this proceeding. Experience has brought him to the following conclusions :—

1. Our knowledge as to diagnosis and treatment of mortal complications is imperfect.

2. Opening the cranial cavity is indicated where fever and general symptoms are present in cases of purulent otitis without retention.

3. Even when nothing is found, this proceeding diminishes intracranial pressure as well as other conditions favouring septic absorption.

4. When thrombosis is suspected the sinus should be punctured after opening the cranial cavity. In most cases the question as to opening the sinus freely can in this way be decided.

5. Exploratory puncture, and even incision, if carried out with aseptic precautions, cannot cause general infection. If the latter already exists, matters are made no worse.

6. Clinically, two forms of pyæmia are to be recognized ; the form with and the form without thrombosis of the sinus.

7. The thrombotic form usually arises out of the non-thrombotic. Both forms arise if the centres of infection in the ear or cranial cavity are not removed sufficiently early, or if the opportunities of infection are not suppressed.

8. Pyæmia without thrombosis nearly always has a favourable issue when rational treatment is employed, and even when not treated.

9. Pyæmia with thrombosis nearly always has a fatal issue. A certain proportion are saved by timely operation.

10. It is often very difficult to decide on the moment for operation, especially when signs of general infection are present. When one can afford to do so it is best to wait and make sure of a diagnosis.

Ernest Waggett.

Jauhelevitch.—*A Case of Labyrinthine Vertigo, simulating Ménière's Disease, Cured by Pilocarpin Injections without Loss of Hearing.* "Rev. Heb. de Laryng., Otol., et Rhinol.," Dec. 25, 1897.

THE case of a healthy woman of sixty-five, who, while walking in the street, was suddenly seized with intense vertigo, with tendency to fall and loss of consciousness. Vomiting soon followed and severe tinnitus. For two months, while in the hands of her own doctor, these symptoms continued unabated in spite of bromide, quinine, and iodides, vomiting occurring three or four times a day. On examination by the author at the end of that period, the affected left ear was found to be normal in appearance and function; a certain degree of loss by bone conduction was present and equal on the two sides, and did not exceed that accounted for by advancing years. On inquiry the author learnt that for two or three days after the attack there was some weakness of the right arm and leg, nasal intonation (? paresis of palate), and paresis of the left side of the face. At no time had deafness been complained of. In view of the lack of success attending the treatment so far employed, hypodermic injections of pilocarpin were ordered. After three injections (Mx of two per cent. solution) the vomiting ceased. Vertigo was much

reduced in intensity at the same time. After ten injections the tinnitus was very much diminished, but persisted in some degree at the time of writing. Hearing unchanged. The exact diagnosis must for the present remain undetermined.

Ernest Waggett.

Kalmus.—*Otitic Cerebral Abscess in the Right Lobus Temporalis.* "Prague Med. Woch.," No. 51, 1897.

OTORRŒA for thirty-three years. Intense headache only for three weeks. Light stupor. Paresis of the left nervus facialis and the left arm. No operation allowed. Death.

R. Sachs.

Körner, O.—*Notes on a Case of Middle Ear and Mastoid Suppuration in a Diabetic Patient, with Remarks on Percussion of the Mastoid Process.* "Arch. of Otol.," 1897, p. 412.

THE patient, a man aged fifty-four, consulted the author on account of a suppurating right ear. The pulse was rapid, but the temperature was normal. The tissues over the lower half of the mastoid process were cedematous and tender. The perforation, which was small, and partially blocked by a pedunculated granuloma, was enlarged, with the result that within three days the pain and swelling had disappeared. An analysis of the urine showed that it contained five per cent of sugar. A bacteriological examination of the discharge revealed the presence of staphylococcus albus, in pure culture. A few days afterwards, when the patient was again examined, *the percussion note over both mastoid processes was exactly similar.* The patient gradually sank, and died of coma. Shortly before his death dulness on percussion over the right mastoid process was noted, but normal bony resonance over the left. The author regards the case as one of disintegration within the mastoid process, and considers percussion a valuable aid in diagnosis. When the percussion note of a bone changes from the normal to dulness during observation and repeated comparison with the percussion of the healthy one, without a change in the covering of the bone, in all probability some change in the interior of the bone has taken place.

W. Milligan.

Lake, R.—*Indications for Operations on the Mastoid.* "Med. Press and Circ.," Jan 9. 1898.

THE indications are grouped as follows :—

(a) 1. Acute otitis media suppurativa, with acute disease of antrum. 2. Influenzal mastoiditis. 3. Secondary infection from meatal abscess. 4. Acute tuberculosis of middle ear. (b) 5. Chronic otitis media suppurativa. 6. Acute exacerbation in chronic disease. 7. Periodic or constantly recurring discharge. 8. Facial palsy (in chronic cases, rarely in acute). 9. Cholesteatomata of attic and antrum. 10. Lateral vertigo on syringing. 11. Persistent mastoid pain. 12. Contraction of meatus. 13. Bezold's mastoiditis. 14. Mastoid fistula. 15. Necrosis. (c) 16. As a preliminary to other operations.

And the various symptoms peculiar to each variety are shortly dealt with.

Luzzati.—*On the Perception of the Watch by Bone Conduction in the Diagnosis of Aural Affections.* "Ann. des Mal. de l'Oreille," Oct., 1897.

THE foundation of the method to be described lies in the fact that the watch is heard with much greater intensity when applied to the root of the zygoma than when the point of application is posterior to the meatus. The point of maximum intensity behind the ear is the inferior extremity of the mastoid process, close to the digastric groove. Perception of sounds transmitted from this point is not only more feeble, but, in particular, is defective for the lower metallic notes of the watch. A comparative measurement of the intensity of perception from the two

points mentioned may be made by mounting the watch on a handle, which is shortened and lengthened at will by a "telescopic" arrangement.

Under normal circumstances, it is found that the perceptions are equalized when the handle applied to the root of the zygoma is about twice the length of that applied to the mastoid; and the conductivity of sounds from the two points may, therefore, be expressed as a ratio of two to one.

This ratio is explained by the consideration that sounds conducted from the mastoid region affect the perceptive apparatus by bone conduction solely, whereas those approaching from the front are inevitably conducted to and through the membrane and ossicles. This consideration is proved by the fact that occlusion of the meatus by a plug of wool, placed close on the normal membrane, disturbs and even inverts the positive ratio, equality of perception being brought about only when the measuring handle is shorter on the zygoma than on the mastoid.

Inversion of this ratio—*i.e.*, a "negative" result—was found in forty-eight out of fifty cases of deafness from cerumen, the "positive" result returning on removal of the wax. In the two exceptions middle-ear disease was subsequently detected.

A number of cases are reported, illustrating the utility of the method and confirming the explanation of the phenomena mentioned above. The author finds in it a very easy and rapid means of localizing the seat of the lesion, and one which calls for no special intelligence on the part of the patient. Its value is particularly evident in cases of slight deafness; and, unlike other methods, it gives information with regard to all grades of departure from the normal, and not merely to a reversal of the normal reaction.

Ernest Waggett.

Ouston, T. G.—*A Case of Antro-Tympanic Disease and Bezold's Mastoid Abscess, complicated with Extradural Abscess; Paralysis on the same side as the Lesion supervening after Operation; Recovery.* "Brit. Med. Journ.," Jan. 22, 1898.

THE patient, a girl aged fifteen years, had suffered from left-sided suppurative middle-ear disease for twelve years, and from a gradually increasing swelling in the upper part of the neck for two months. There was no history of vomiting, dizziness, or paralysis. The temperature was 103° Fahr., and the pulse 110. A fluctuating and oedematous swelling extended from the vertex to the level of the thyroid cartilages. A semilunar incision was made behind the attachment of the pinna, and much offensive pus liberated. The abscess cavity extended deeply into the neck under the sterno-mastoid muscle. The mastoid cells were now opened and drained, and in opening the antrum downwards the non-thrombosed lateral sinus was accidentally opened. A small and loose sequestrum was removed from above and behind the antral opening, and a larger opening was found into which a probe could be passed for a distance of one and a quarter inches. By means of a curved probe introduced through this opening a cavity could be made out between the dura and the bone. For a time the patient did well, but some days afterwards complete paralysis of the left external rectus muscle was found, the pupils being semidilated, equal, and sluggish in reacting to light. Intense neuro-retinitis was found, especially upon the left side. Slight left facial paresis was also present. No paresis of the left leg or tache cérébrale could be made out, and the patellar reflexes were obtainable with difficulty. Gradually the patient recovered. The author remarks that the extradural abscess was probably continuous with one in the cerebellum, and that it had burrowed downwards in the sheath of the sterno-mastoid muscle. The explanation of the paralyses upon the same side of the body as the lesion is explained as an involvement of the motor fibres in the inflammatory process after their decussation.

W. Milligan.

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**PARALYSIS OF THE ABDUCTORS IN PROGRESSIVE
ORGANIC DISEASE.**

By J. MACINTYRE, F.R.S.E., &c.

READERS of Fraenkel's "Archives of Laryngology and Rhinology" will have been considerably interested in the communications upon this subject published on behalf of Herr Grossman, of Berlin, and Sir Felix Semon, of London. The former has attacked Semon's views in a long paper, to which a very full reply has been made by the latter. In the last number of the "Archives" Herr Grossman makes a reply to Sir Felix Semon. That the position taken up by Dr. Grossman is of some importance must be gathered from the conclusion arrived at on the grounds of critical analysis of the work of predecessors, and of his own experiments in animals, namely, that the abductor paralysis advanced by Semon, and the spasm theory of Krause, with the proof as to the position of the vocal cord after division of the inferior laryngeal nerve, has not been definitely determined; and so strong is the position taken up that he goes the length of stating that neither the one theory nor the other can be longer considered or maintained. From time to time the questions involved have been considered at International Congresses and various Associations at home and abroad, and it will be within the recollection of a number of readers that at the Nottingham meeting of the British Medical Association the question of the acceptance of Semon's law was once more prominently brought before the profession by a case of progressive organic disease described by Prof. Schroetter, in which he had come to the conclusion that the abductors had *not* been first affected. For some time, however, the question has been brought less prominently before the profession, doubtless because each exponent and his followers had decided to wait the verdict which would ultimately follow by increase in clinical and experimental data. The above-mentioned papers will, no

doubt, again excite a considerable amount of attention ; and as the subject with its manner of representation may fairly come under the scope of editorial work in a special journal devoted to laryngology, we think it a fitting opportunity to view some of the more important positions taken up in the past, and to consider the subject in the light of Herr Grossman's work.

Briefly stated, we may say that previous to the year 1876, in cases where the nerve centres or trunk of the motor laryngeal nerves were affected, no definite statement had been made about any particular set of muscles being first to suffer. The idea seemed to be more that, given a slow progressive lesion, there would be either a general paresis of all the muscles supplied by the recurrent, or that some sets might exclusively be affected, but which set, as far as one can gather, was looked upon more as a matter of accidental circumstance. Rosenbach first announced the fact that by compression of the trunk and recurrent laryngeal nerve the function of abduction suffers first. It has been said elsewhere that the same view was foreshadowed by Gerrard, Mackenzie, and others. Be that as it may, in the above we have a definite statement tending in the direction of the views which have since that time become so prominent. In reviewing the subject Semon claims that Rosenbach's work was mere contention ; that the generalization from a single case was not justified ; that the statement referred only to peripheral paralysis, and did not include central lesion ; and that no real proof of the statement had been forthcoming. The question we are at present considering does not include that of the controversy as to the priority of claims, but it is necessary to refer to it inasmuch as any attack upon Semon's views must include central as well as peripheral lesions. From the first edition of the German translation of Morel Mackenzie's work by Semon until now, even those who differ from the latter must acknowledge that, whether viewed from the clinical, pathological, or experimental standpoint, for seventeen years no effort on his part has been spared to obtain proof and confirmation of his theory in his own work or in the work of others.

We may approach such a question from several standpoints, but for convenience it may be advisable here to limit it for the most part to two : firstly, the clinical ; and, secondly, the experimental aspect. It may be useful, before considering either, to point out that there is an essential difference between admitting, as many experimenters now are inclined to do, that, *as a rule*, the abductors suffer first, and the claims of those who have raised it to the dignity of a law. A law could admit of no exception. Judging from this standpoint, therefore, those who advocate Semon's law must be prepared to accept the most serious test and onset from every standpoint. There is another question involved which it may be as well to discuss before proceeding further, namely, the proper value placed upon experimental research. In our profession a certain number of men seem to be nearly altogether influenced by experiment, whether physical, chemical, or physiological. On the other hand we have those who may be inclined to look at medicine purely from the clinical standpoint. Neither of these attitudes is to be recommended, because, however valuable experimental research may prove, it will readily be granted that

where a large number of observers at the bedside find a constant evidence of lesions with an apparent discrepancy between results of experiment and clinical observation, they are entitled to suspend judgment until the facts are further reconciled. What is the position with regard to the clinical aspect of the question? Schnitzler, Solis Cohen, Charazac, amongst others, have recorded cases which they considered exceptions to the rule. Semon has not admitted the validity of these, explaining one as being of a mechanical disturbance, another as a local disablement, etc. Further, as we have said, at the laryngological section of the Nottingham meeting of the British Medical Association, Schroetter placed on record another exception as noted above. Semon replied to the observations of Schroetter, and at the end of the discussion each held his own views. That Semon's argument, however, made a strong impression upon the author of the paper, we know, and in Schroetter's second edition of his text-book, since written he says, referring to the greater vulnerability of the abductors in organic progressive disease, "The fact is at present being established by so many observations, that its correctness can no longer be doubted."

That all writers of our text-books in this country and America have not accepted this view is shown from the fact that Browne, after quoting Hooper, Donaldson, Cohen, is unable, like the latter, to discriminate between the vocal cords in extreme abduction and their position in relaxation; and, referring to the works of Exner and Weinzweig, says he is precluded from giving his adhesion to this rule, or, at least, to accepting it in its entirety. Bosworth, in his latest edition, still holds to the opinion expressed in his former articles on the subject, and thinks it is fair to conclude that this function is presided over by an independent ganglionic nerve centre, and that the disease in question consists of some degenerative change taking place in this portion of the nerve centres. On the other hand, it must be remembered that after all these years of gradually increasing literature, and yearly increasing number of skilled observers devoting themselves to this special department, the cases cited in opposition to the law are very few in number. Semon claims that since his earliest paper there is not a single authenticated case on record in which it has been shown by *post-mortem examination* that in a slow progressive organic lesion the motor nerves of the larynx governing adduction had been primarily or exclusively affected. The wide acceptance of Semon's views may be gathered even from a statement of Herr Grossman himself in the paper we are considering, in which he admits that the large majority not only of laryngologists but also physiologists and neuro-pathologists have accepted Semon's law. Another and extremely important point which has been raised in the present discussion may now be considered, viz., the necessity of *explaining why there* should be greater vulnerability. It is now only fair to say that if scientific views can only be accepted after the facts have been explained, then our views in science generally will become much more limited and modified. An excellent example may be obtained in the demonstrations at present interesting the whole physical and medical circles upon the phenomena observed inside and outside the Crookes'

tube during electrical excitation. While there is practical unanimity of opinion about the question of effects, a glance at the different theories put forward by way of explanation of the causation in the literature will speedily convince the reader of how little the ablest physicists know about the question. But we have had explanations of the greater proclivity of the abductors attempted by Gower, Robinson, Solis Cohen, and others. Even from the purely experimental views we do not for a moment forget Wagner's in relation to the crico-thyroid muscles, nor, least of all, the careful and classical experiments of Krause, who in his efforts to bring about the production of these changes in the muscles by imitating the pathological processes, came to the conclusion that it was a question of excitation or spasm and not paralysis. The latter we know were not only combatted by Semon but also by Fraenkel, Rosenbach, and others; and even Bosworth, as already quoted in the latest edition of his work, says: "It is difficult to understand how a clonic spasm affecting a given group of muscles can persist through a long period of years even, without resulting in degenerative changes which are to an extent uniform in all, for repeated investigations have demonstrated conclusively that the *abductor* muscles are the ones which *alone* undergo marked atrophic degeneration."

As opposed to such a view we are not without attempts to explain the phenomena from peripheral conditions known as bio-chemical conditions. In this connection something has recently been done to show that there are differences in the nerve endings of muscles. Thus, Grabower in some microscopical examinations has come to the conclusion that the nerve endings of the recurrent laryngeal nerves are more complicated in the adductors than the abductors. Then we have Hooper's experimental work showing the difference in response to electrical excitation in different conditions of anæsthesia. Fraenkel and Gad have shown that the loss of function in the larynx when the recurrent laryngeal nerve was frozen appeared first in the abductors. Risien Russell, after separating the individual bundles of the same nerve, finds that the abductor loses its electrical excitability earlier than the adductor, while the difference in excitability has been shown by Jeanselme and Lermoyez in recently dead subjects from cholera; and many other experiments have been made by Horsley and Semon in animals, all tending by way of suggestion in the same direction. Without committing ourselves in any way to more than a plain statement of facts, the above, we think, might fairly represent the views upon this question previous to Herr Grossman's paper published in the "*Archiv für Laryngologie und Rhinologie*," Sechster Band, Heft 2. The paper in question is divided into twelve different parts, and occupies nearly eighty pages. After a few remarks upon the history he passes on to clinical analysis of the hypothesis, experimental research, and other works of practically all the names to which we have referred already.

With an opening statement like Herr Grossman's, which would lead us to the conclusion that Krause and Semon's views can no longer be maintained, one would naturally look for a destructive criticism embodying both clinical and experimental research. In the former, at least, the

reader will be disappointed, and it is for this reason that we have taken care to emphasize the importance of clinical investigation as well as experimental. Notwithstanding the long reviews which the reader has to peruse in going over the paper, most attention will be paid to the author's own experiences, which appear in page 310 of the journal in question.

At the very onset a difficulty is introduced because Grossman does not make use of the usual terms in referring to the vocal cords in different positions. We know that a complaint of this sort has been made before, because in Browne's work, above referred to, Solis Cohen points out his difficulty in distinguishing between the position of the vocal cords in abduction and their position in relaxation. Now, whatever may be the difference of opinion as to the value of certain terms in experimental research, for comparison, it is well, as far as possible, if the writer objects to a particular term, to substitute something better, or, at least, to make himself clear. In Wagner's experiments, for example, no doubt can arise in the mind of the reader, because, although differing in many ways, his position is at least clearly defined. Throughout this work, however, we are constantly being reminded of the "position of adduction," etc. Judging as far as we can, however, of what is meant, the question largely resolves itself into the position occupied by the vocal cords which Herr Grossman observed after section of the nerves. Semon puts it in this way: If the position of the adductors to which Herr Grossman refers—*i.e.*, the same as that which follows division of the recurrent in his experiments—is identical to the position of which he in all his earlier works speaks, then the discussion is ended: but, if so, are we to understand that Herr Grossman ever (not to speak of constantly) says that in his experiments, after section of the recurrent, it loses its median position. Then Semon complains that he has not said so. We quote this as an example of the difficulty in arriving at a conclusion with regard to the statements of Herr Grossman.

Speaking more particularly of the experiments, it may be said that they were made in animals—dogs and cats of different sizes—and they were classified as (1) made before section of the laryngeal nerve, *i.e.*, while they were preserved, (2) after division of one recurrent, (3) after division of both recurrences, (4) after division of both superior laryngeal nerves, (5) immediately after death, (6, and lastly) twenty-four hours after.

A limited portion of the small part of the long paper is devoted to his own methods of experiment and apparatus, so that after all the part which most interest us is reduced to comparatively small space. After reading Herr Grossman's own experiments, which we have no intention of detailing, we are bound to confess that the most (seeing the difference of opinion at which he has arrived) that can be claimed for this work will be that some of the experiments might be once more gone over by those who have come to different conclusions. We repeat, however, that unless these experiments are in accordance with clinical observation, the profession will not be satisfied until the discrepancies have been explained. In this case, and we trust we are not overstating the matter,

we must say, nothing in the paper we are considering justifies any sweeping assertion that either Krause's spasm theory or Semon's abductor paralysis can no longer be maintained. Bosworth, in referring to Semon's experiments in the second edition of this work describing them as admirable, says: "After all it is a question as to how far physiological experiment aids us in the elucidation of the finer points in neuro-pathology. Can the nice differentiation and delicate localization of a morbid process at the ganglionic centres, or in the continuity of a nerve, be in any way imitated or even approached by the harsh, coarse, and rude manipulations of the physiologist's scalpel and scissors?"

Whether we are inclined to agree with this or not, in such delicate matters there is every room for liberality in judgment and confession of the possibility of errors by any experimenter. Let us quote an example in point which is referred to in these papers. In certain animals, particularly young or small animals, the vocal cords may go to the median position after section of a nerve, not from any loss of function in the nerve, but from merely local conditions, due to the process of inspiratory movement taking the cords to the middle line. Judging of such results, the experimenter ought to try a number of animals (imitating the conditions as nearly as possible) and note the difference between cases in which tracheotomy had been first performed and those cases in which it had not.

We have no desire to follow Herr Grossman fully in this note, but we would advise those particularly interested in the question to go carefully over his work and judge for themselves.

There is one aspect of the question, however, to which we refer with considerable regret, and that is the manner in which the controversy was begun and finished. If anyone should doubt the statements of Krause or Semon, it is quite possible to lay clinical matter before the profession and to record experimental research without mixing it up with a good deal of personal feeling. This to a very regrettable extent is to be found in this work. There will be those who think that in Semon's reply he is wrong in attributing motives, but those who take this view will be considerably disarmed by the last reply on the subject by Herr Grossman. We have no intention of taking sides in this dispute, but whoever first introduces such feelings in a controversy is to a large extent responsible for what afterwards follows.

There is one thing further to which we would refer, and that is the importance of clinical, pathological, and microscopic examination in all such cases; and these columns are always open to those who will give us the results of such research. We would suggest that when cases of progressive organic disease involving the recurrent nerves are detected at an early stage, they should be carefully watched from beginning to end, if possible, and that pathological, including microscopic, examination should be made. A well-authenticated case, proving the lesion to have appeared first in the adductors, would naturally destroy the possibility of accepting the views expressed by Semon as a law; while, of course, it would not prevent laryngologists from accepting his views as a rule.

AURAL REFLEXES.

By MACLEOD YEARSLEY, F.R.C.S. Eng.,

Assistant Surgeon to the Royal Ear Hospital, Surgeon-in-charge of the
Department for Diseases of the Throat, Nose, and Ear, the
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OF the numerous reflex phenomena which occur throughout the body those arising in the ear are not the least in interest. They range from the trifling "ear cough" to the more alarming "cardiac reflex," and to the otologist form as familiar a part of his day's work as the passage of a Eustachian catheter. I propose, in this short paper, to relate a few cases of aural reflexes which have recently come under my notice in the ordinary out-patient clinic.

Before proceeding further, however, it will be well to shortly review the nervous connections of the external and middle ear, which are responsible for the production of these interesting phenomena. The external meatus derives its nerve supply from the auriculo-temporal branch of the third division of the fifth nerve, and from the auricular branch of the vagus. The latter (Arnold's nerve) arises from the ganglion of the root of the pneumogastric, and, receiving a connecting filament from the petrous ganglion of the glosso-pharyngeal, passes through a narrow canal in the substance of the temporal bone, crossing in its way the Fallopian aqueduct, and being connected with the facial nerve by ascending and descending branches of communication. Emerging from the bone in the interval between the mastoid process and the external auditory meatus, Arnold's nerve ends by supplying the integument on the posterior aspect of the ear, sending a twig to join the posterior auricular branch of the facial. It is important, in considering aural reflexes, to remember that Arnold's nerve supplies the skin of the osseous meatus, and that which covers the lower part of the membrana tympani (Sappey).

The auriculo-temporal nerve supplies the skin lining the meatus by two filaments, and also gives two to the integument over the upper and fore part of the pinna; the latter gain the interior of the meatus by passing between the osseous and cartilaginous portions of the canal. The two former twigs supply the upper and greater part of the membrane. Beside these, the auriculo-temporal has the following distribution :— (1) One or two strong branches of communication to the temporo-facial nerve; (2) filaments which enter the posterior aspect of the temporo-maxillary joint; (3) twigs to the parotid gland; and (4) terminal filaments to the scalp.

The middle ear is rich in nerves, for, besides those which supply the parts of the tympanum itself, there are several which merely serve to connect nerves of different origin. The lining membrane is supplied from the tympanic plexus, which is formed of (1) Jacobson's branch of the glosso-pharyngeal; (2) the small deep petrosal (connecting Jacobson's

nerve with the carotid plexus); (3) a branch which joins the great superficial petrosal; and (4) the small superficial petrosal, passing to the otic ganglion. In the plexus are numerous ganglion cells. Jacobson's (tympanic) nerve arises from the petrous ganglion of the glosso-pharyngeal and goes to join the otic ganglion; besides the connections mentioned it is also joined by a branch from the geniculate ganglion of the facial. Whilst in the tympanum it supplies (1) the mucous membrane of the tympanum; (2) the lining membrane of the mastoid cells; and (3) the mucous membrane of the Eustachian tube. The passage of the chorda tympani and facial nerve through the tympanum must not be overlooked.

From the above short review it is seen that the external and middle portions of the ear are supplied by a nerve of very wide distribution—the vagus; and from a nerve of special sense—the glosso-pharyngeal; and its nerve channels are multiplied by connections with the facial, the sympathetic, and that great sensory nerve, the fifth. That irritation of the terminal twigs by this nerve supply should call forth reflexes of corresponding amplitude is not to be wondered at.

The reflex phenomena for which the ear can be called to account are ear cough, cardiac, taste, and gastric reflexes, epileptiform convulsions, hiccough, and the reflex effects of ear disease on the oculo-motor apparatus. Of two of these reflexes, namely, hiccough and epileptiform convulsions, I have no personal knowledge, but I have frequently seen instances of the others. One case of persistent hiccough due to retraction of the membrana tympani, and relieved at once by Politzerization, has been recorded anonymously.¹ Epileptiform convulsions may be reflexly produced by both aural and intranasal disease. Instances of the latter have been published by Barclay Barron² and the late Sir Benjamin Richardson,³ and the former by Walker Downie,⁴ Griffiths,⁵ Wilde,⁶ and others. The mechanism of this reflex is probably an exaggeration of the reflex laryngeal irritation which gives rise to "ear cough." Marshall Hall considered the immediate cause of epilepsy to be spasm of the glottis, *plus* reflex spasm of the cervical muscles, resulting in venous engorgement and coma. Kussmaul and Tenner showed that spasm of the glottis alone is capable of causing both coma and convulsions. The irritation carried by Arnold's and Jacobson's nerves to the floor of the fourth ventricle gives rise to a reflex irritation of the laryngeal nerves, which causes, not the contraction of the expiratory muscles producing ear cough, but spasm of the muscles of the larynx, and consequent laryngismus. The inheritance of any special neurotic tendency—a family history of epilepsy, for instance—might act as a predisposing cause.

Ear cough is the simplest form of reflex, and, probably, the commonest. It is readily induced in many cases by the simple introduction of a speculum. Fox, of Scarborough, found that he could excite it in one in five cases out of one hundred and eight examined by him. It is a reflex of importance to the general practitioner, since it may be excited by cerumen or foreign bodies, especially in cases where the accumulations

¹ *Hospital Gazette*, Aug. 23, 1890.

² *Brit. Med. Journ.*, Mar. 14, 1896.

³ *Æsclepiad*, 1887, p. 48.

⁴ *Lancet*, June 16, 1888.

⁵ *Lancet*. Vol. I., 1872.

⁶ *Practical Observations on Aural Surgery*, 1853, p. 326.

of wax are hard, dry, and movable. Such a cause for the cough is not infrequently overlooked, as in the following example :—

E. W., aged sixty, paperhanger, complained of headache and troublesome “dry” cough, the paroxysms of which brought on pain in the left ear. He was treated in the physician’s outpatient department of a general hospital for over a month, with various cough mixtures, etc. At the expiration of that time he began to notice slight deafness, and came of his own accord to the ear department. Both ears contained plugs of hard, dry cerumen, which was removed by syringing, with the result that the cough disappeared in one day.

Dr. Percy Jakins⁷ has reported one case which, to those not conversant with these reflexes, would sound like a fairy-tale.

The mechanism of ear cough was worked out by Fox, as early as 1869. Originally believed to be the result of stimulation applied to the auricular branch of the vagus being conducted to the laryngeal branches of the same nerve, Fox concluded that “the connection between the nerves concerned took place in the nervous centres,” the nerves involved being the two branches of the auriculo-temporal and Jacobson’s nerve. By these channels the stimulus is carried to the centres in the floor of the fourth ventricle, where, it will be remembered, the roots of the vagus and glosso-pharyngeal nerves are in close connection. The stimulation being mistaken for laryngeal irritation (of comparatively frequent occurrence), cough is the result.

The cardiac reflex varies from mere faintness to syncopal attacks, calculated to alarm both patient and friends. Every otologist knows how patients will occasionally become faint whilst the ear is being syringed, or even examined. The following example shows it in its more severe aspect :—

H. D., aged six, was brought to me in 1891, suffering with discharge from both ears, of thick, yellow, highly offensive pus. His father was unable to give any definite history as to duration, cause, etc., beyond saying that the discharge had lasted “some time,” and had never been treated. The left ear was gently syringed with no untoward result ; but whilst a similar proceeding was being carried out on the right side, the boy suddenly complained of feeling very faint, and dropped unconscious from the chair. Ordinary remedies revived him in less than three minutes, but it was judged best to keep him lying down for half an hour, before sending him home. This unfortunate occurrence seriously alarmed his father, and prevented further treatment at my or any other surgeon’s hands, with the result that he succumbed eighteen months later to cerebral abscess.

Similar examples are not lacking in any clinic devoted to diseases of the ear. Middlemass Hunt⁸ described a case in which profound coma lasted more than half an hour.

Closely allied to the cardiac is the gastric reflex, several instances of which have been recorded by Hilton, Toynbee, Politzer, Wilde,⁹ Kynaston,¹⁰ and others. The following are good examples :—

⁷ *The Practitioner*, June, 1887.

⁹ *Loc. cit.*, p. 188.

⁸ *Lancet*, Oct. 10, 1887.

¹⁰ *Lancet*, June 30, 1888.

E. W., aged twenty-three, the subject of chronic suppuration in the left middle ear. On removing a large polypus she complained of great nausea, and could with difficulty refrain from vomiting. She was similarly affected a month later.

M. A. J., aged fifty-four, the subject of keratosis obturans, was treated with instillations of glycerine and salicylic acid. On removing the epithelial masses she complained of nausea, followed almost immediately by violent retching, which culminated in vomiting.

Vogan¹¹ has recorded a case in which the cardiac and gastric reflexes were combined. It is not surprising that they should so occur when one considers the distribution of the pneumo-gastric. The following is a very complete and interesting example of such a combination :—

J. W., aged twenty-five, had been deaf, with discharge and occasional pain, for twenty years. Both ears were affected, and the disease originated in an attack of scarlet fever at the age of five. The discharge was very fetid. He had been a long time under treatment at the Homœopathic Hospital, and was getting steadily worse. In both ears the membranæ were destroyed, the stapes only remaining. The left ear was examined with a probe under a five per cent. solution of eucain hydrochloride, which rendered it quite anæsthetic. On touching a small granulation in the left inferior posterior quadrant the patient dropped from the chair in a syncopal attack. His face became pallid, the lips blue, the eyes turned upwards, and the pulse small and irregular. He recovered quickly, breaking into a profuse cold sweat. He afterwards stated that as the probe touched the ear he felt as if “whirled round upon a wheel,” heard a “noise like machinery,” and felt very sick. Once during the following week he had a similar attack whilst the ear was being syringed, during which he vomited. After a month’s treatment, local and general, he was so far improved as to allow the ears to be probed under eucain without suffering any inconvenience.

The intimate connection between the nuclei of the vagus and glosso-pharyngeal nerves in the floor of the fourth ventricle will easily account for the following case of “taste reflex” :—

J. C., aged thirty-two, suffered with chronic suppurative right middle ear disease, with granulation polypi. Whenever the free discharge of pus was interfered with by a polypus blocking its outlet a bitter taste at the back of his mouth was complained of. Removal of the polypus and the establishment of freer drainage caused the disappearance of the symptom. No pus was ever seen to issue from the Eustachian tube with the posterior rhinoscope.

I have been unable to find any other recorded cases of taste reflex.

The reflex effects of ear disease upon the oculo-motor apparatus was recently the subject of a paper by Urbantschitsch.¹² He pointed out that the influence of the ear upon the oculo-motor apparatus most commonly manifests itself in nystagmus—more rarely in spasm or paralysis of the eye muscles and affection of the internal musculature.

Nystagmus, which is more frequently oscillatory than rotatory, may be caused by affections of the outer, middle, or inner ear, or of the

¹¹ *Lancet*, July 7, 1888.

¹² *Wien. Med. Woch.*, Jan. 2, 1896.

auditory nerve itself. In one case a slight inflammation of the cavum tympani caused oscillation, a more violent inflammation rotation. A powerful movement of the eye away from the affected ear usually favours the nystagmus, but may in some cases weaken or inhibit it. Nystagmus is often evoked by very slight interference with the ear, such as syringing, particularly with cold water; this shows that the reflex action depends not solely upon pressure, but also on thermic influences. It may also result from the removal of a polypus, or a plug of secretion.

Högyes obtained very marked nystagmus by draining the perilymph space, and inflating it with air. Nystagmus may also result from acoustic influences, such as a special sound or tone, being in such cases usually slight. The occurrence of nystagmus in ear affections is, according to Urbantschitsch's further remarks, usually of reflex origin, although occasionally it may be induced by morbid conditions of the occipital lobes, or by thrombosis of the lateral sinus.

A much more rare reflex disturbance of the oculo-motor apparatus in ear disease is strabismus. Urbantschitsch records two cases. In one, a boy of six years, a convergent squint was directly attributable to otitis media, its degree varying as the intensity of the inflammation. A cure of the otitis greatly improved the squint, although it did not cause it to disappear. The second case was that of a woman in whom the divergent strabismus of the eye of the affected side resulted from slight inflammation, associated with an aural polypus. The removal of the growth caused a sudden increase of the squint, which persisted, although the ear rapidly became well. Luc described a third case.

Moos has recorded a case of paralysis of the superior oblique muscle as the result of otitis media, and one of myosis of the corresponding eye in a case of purulent otitis. Gellé speaks of sudden dilatation of the pupil occurring at the moment of removal of an aural polypus. Slight pupil dilatation is not uncommon with changes in the intratympanic pressure, and is particularly associated with condensation or rarefaction of the air in the external ears of patients with perforations of the membrana tympani.

The perusal of Urbantschitsch's remarks led me to pay some attention to the eye whilst examining or syringing the ear. On one occasion I observed a transient strabismus on the affected side to occur in a man, aged twenty-seven, whilst the right ear (affected with chronic suppurative middle ear disease) was being syringed. The squint occurred once again on a subsequent occasion.

Dilatation of the pupil I have noticed on four occasions, during the condensation or rarefaction of the air in the meatus with a Siegle's pneumatic speculum. Of these four cases, two had perforations, and in two the tympanic membranes were intact. In three cases the dilatation of the pupil occurred in both eyes; in one (in which there was a large inferior posterior perforation), in the eye of the affected side only. No doubt, if one could pay more attention to the eye whilst examining the ear, instances of this dilatation of the pupil would be multiplied, and, possibly, further cases of transient strabismus might be recorded.

CONSIDERATIONS AND OBSERVATIONS ON THE SURGICAL ANATOMY OF THE TYMPANIC ANTRUM.

By R. LAKE, F.R.C.S.

By this heading I desire to consider especially certain anatomical points which are constantly obtruding themselves to our notice, and not always at the most opportune moment ; foremost among these are the relation of the cavity with—

1. The Lateral Sinus or Fossa.
2. The Middle Cranial Fossa.
3. The Facial Nerve.
4. The Vestibule, etc.

1. *The Lateral Sinus.*—Of all, this structure or its fossa bears the least constant relationship to the antrum, and below will be found a series of woodcuts showing its more usual variations. The method of preparation of these was by cutting sections of a number of bones, the saw-cut passing in a horizontal direction through the small fossa situated immediately superior to the supra-meatal spine, and I think more frequently present than the former.

It may here be incidentally noted that this fossa is as good, if not from its greater constancy a better, guide to the antrum in opening this cavity than the spine.

In the figures an asterisk denotes the fossa. Bones were only taken from adult skulls.

Careful tracings were made from each. These were next compared by placing them one over another, and so six groups formed themselves, which allowed of a further reduction into three main groups, viz.—

1. That class of skull in which the antrum must unavoidably be opened, or rather exposed, during operation on the antrum.
2. That in which it may or may not be seen during the operation.
3. That in which it will not come into view.



FIG. 1.



FIG. 2.

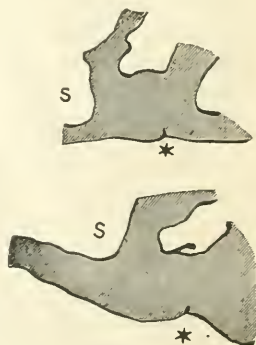


FIG. 3.



FIG. 4.



FIG. 5.



FIG. 6.

The primary divisions are marked 1 to 6, and are thus distributed :—

Group 1, Fig. 1. Two sections.

Group 2, Fig. 2. Two sections.

Group 3, Figs. 3, 4, 5 and 6 respectively, 9, 6, 7 and 2 sections, or 24 in all.

From this we may not unreasonably draw the deduction that the sinus will come into view about once in every six cases operated on. However, it must not be overlooked that a great deal depends upon the size of the opening made in the bone, and that the use of the burr should reduce this proportion still lower, though that can scarcely be urged as a reason for adopting it. Nor is the total number of bones conclusive (28).

Be this as it may, no harm should occur from exposing the sinus, or for matter of that even if it is wounded, though it is a startling occurrence to a young operator.

Bezold's perforation depends entirely upon the anatomical distribution of the cells (aërial) which obtains in some skulls, and can only occur if the mastoid process is of that variety known as "diploetic," where the whole process is one series of cells, for when the bone is of this structure one always finds a large thin-walled cell with one surface often of extreme tenuity on the mesial or digastric surface.

To return to the antrum, the following are the result of measurements taken from the bones :—

(a) Average depth of attic three-tenths of an inch from the surface.

(b) The nearest point of the sinus to the antrum on an average 0.48 of an inch, its smallest distance being 0.2 inch, its greatest 0.7 inch.

The Middle Fossa.—In two specimens out of the twenty-eight this lay at so low a level that it would have been quite impossible to have reached the antrum without having either entered the fossa, or having been extremely near doing so.

The Facial Nerve.—There are two principal points where the nerve is exposed to injury in operative procedures around the mastoid—first, in the aqueduct of Fallopius, and, secondly, for the first quarter of an inch after it next enters the mastoid.

In its first situation, danger of wounding it is practically limited to over-vigorous use of curette. In the other, on the contrary, it lies open to more dangers, of being cut in the bone itself, or of being injured by pressure from a mastoid guide, and, I fear, the instrument designed by myself is open to this reproach.

The method to be employed in holding the guide in order to obviate this risk is, to hug the external wall of the iter with the instrument and not to allow it to press on the deep wall.

The other risk, that of severing the nerve, is only liable to occur when the bone is very dense, *i.e.*, in sclerotic mastoids, in which there is either no antrum, or practically none. Here the burr should present an advantage over the less accurate cutting instruments.

One most useful hint to bear in mind is, not to cut away the posterior wall of the meatus at a lower level than the bottom of the iter (this, of course, only applies to the inner third of the meatus); the upright limb of the guide shows exactly where this is. The proposal to freshen and rejoin the divided ends of the severed nerve certainly deserves trial, the nerve being exposed down to the digastric or stylo-mastoid foramen.

The Vestibule.—The only part of the labyrinth which is exposed to any real liability to suffer is the external semicircular canal, the depth of which is only that of the Fallopian canal from the surface.

This structure is not unfrequently exposed by erosion of its bony wall or case, and the only probable danger lies in the indiscreet use of fine pointed instruments. Its exposure or the involvement of the bony canal by extension of the osteitis from the mastoid or elsewhere gives rise to lateral nystagmus, which can at times only be elicited after syringing with hot water, but however obtained the oscillations are small, an important point in differential diagnosis, as in cerebellar cases they are large.

From these considerations one is able to define a certain deep area in which we can work in safety. It is bounded on its deep surface by the inner wall of the adnexæ; below by a level of the lower iter wall; above we can work further up as we go deeper; and posteriorly a small half-inch from the supra-meatal fossa.

As a final piece of advice I would urge the invariable removal of the external attic wall, as any deficiency in the tegmen is then easily and promptly discovered.

ERRATUM.

BRITISH LARYNGOLOGICAL SOCIETY.

THE case shown by Dr. THORNE for Dr. GRANT was under the care of Mr. LENNOX BROWNE (*vide* p. 185).

**BARATOUX'S ELECTRICAL LARYNGO-PHANTOM
MODIFIED.**

By Dr. DUNDAS GRANT.

AMONG the subsidiary aids to the practice of laryngeal manipulation, we beg to draw attention to one which is not so well known in this country as it might be. It is a model of the larynx enclosed in a metal tube, shaped after the fashion of the mouth and pharynx. At several points in this larynx, which is made of plaster, there are small black specks, the terminations of metallic wires, which are continued into flexible cords hanging out of the front of the apparatus. Each of these cords has a pin and a label attached to it. Each label has a number on it, and there is depicted also on the front of the apparatus an outline of the larynx, with dots corresponding to those in the interior, and numbered to correspond with the figures on the label. On the box which contains the battery there are two screw connections, into one of which is fastened a pin attached to a flexible cord joined to the handle of a metallic laryngeal sound. Into the connection on the other side is inserted the pin corresponding to one of the marks in the larynx which the student wishes to exercise himself in touching, and when the sound thus connected up is placed in contact with the proper spot in the larynx a loud electric bell is set going, and the manipulator knows that he has succeeded in "touching the spot." Should he, while doing so, bring the metallic sound in connection with the tube forming the parietes, a small rattling bell is set in action, and the awkwardness in manipulation is thus rendered evident.

Many who have practised with this apparatus have been highly gratified with the improvement in their dexterity as laryngeal manipulators but it has often been objected that a good deal of time was occupied in seeking out the number on the picture of the larynx, and then in finding the appropriate label, before making the connections as required. To minimize this difficulty Dr. Dundas Grant has devised the modification by which the flexible cords derived from the metallic points in the larynx instead of hanging loosely, are brought together and attached to fine metallic tubes. A tracing of the larynx on a slip of ebony is placed in front of the instrument, and in it are holes corresponding to the metallic points in the internal model of the part. The tube attached to each flexible cord is then fitted to the corresponding hole on this tracing.

It is only necessary then to have a single pin connected with the one pole of the battery, the laryngeal sound being connected with the other. At the other end of the cord to which this pin is attached there is a second pin, and in practice this latter is inserted into the hole on the ebony plate corresponding to the point which the student wishes to touch. This is done without any waste of time, and it is possible in a very few minutes to practise on all the points one after the other.

It would be quite erroneous to assume that this instrument repro-

duces all the difficulties which are to be met with in the manipulations on the living larynx, but it approximates to them to a very great degree, and certainly a student who has practised with this instrument approaches the living larynx with much better probability of success than one who, other things being equal, has not had the same opportunity.

In a recent discussion in the British Laryngological Association, Dr. Walker Downey suggested that endolaryngeal manipulation as an art was not cultivated as enthusiastically and thoroughly as might be desired, and his opinion seemed to be that there was too great a tendency to resort to surgical section of the larynx from without before exhausting the resources of the natural passages. While protesting strongly against protracted tinkering with growths of uncertain nature, with the result of losing valuable time, and possibly exciting undesirable stimulation, we think there is much in what Dr. Downey has stated. From what we have seen of the average aspirant to a knowledge of laryngeal surgery, we are convinced that the manipulations practised by the "prentice hand" on the living subject may be the finest possible preliminary training of that subject for intralaryngeal operation, but they are, nevertheless, a source of considerable gratuitous discomfort; and it might not be too much to ask that every clinical assistant, before being allowed to manipulate the human larynx, should be called upon to show his ability to touch all the sensitive points in such an instrument as that to which we are now referring. It might not be carrying it too far to insist that a similar degree of dexterity should be possessed by every candidate for admission to the membership of a laryngological society, but on such a delicate topic we forbear to enlarge.

The instrument in its original form is made by Messrs. Gaiffe, the well-known electrical mechanics of Paris, and Dr. Dundas Grant's modification has been carried out by Mr. Trood, of Wigmore Street, London.

An engraving of the modified instrument will appear in our next issue.

A CASE OF BILATERAL ABSCESS OF THE SEPTUM NASI: INCISION; RECOVERY.

By W. MILLIGAN, M.D.

CASES of abscess of the septum nasi are—so far as my experience goes—decidedly rare, and, when met with, demand prompt and energetic treatment. The following case is of interest, not only on account of the fact that the lesion was bilateral, but also because a most careful examination failed to reveal the presence of any communication between the two collections of pus.

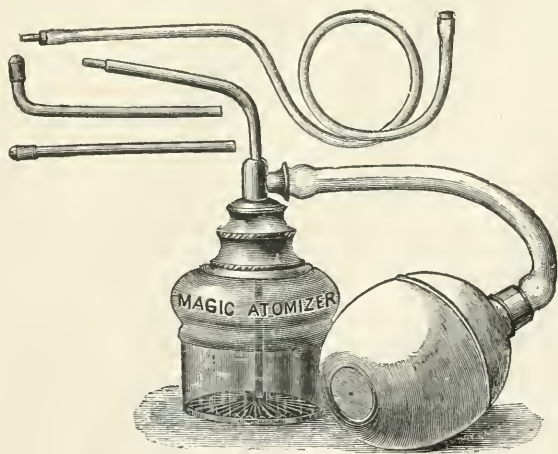
The patient—a healthy boy, aged thirteen—was playing with a companion, when suddenly, and by accident, he was hit with considerable force by his companion, who was swinging his arm in a semi-flexed position, rapidly backwards. The blow caused considerable pain and some slight hæmorrhage. The following day the pain had somewhat increased, and both nasal passages were slightly stenosed. When first seen by me—six days after the accident—the following state of affairs was found. Both nasal

passages were almost completely blocked by soft, fluctuating, bluish grey swellings, springing from the anterior part of the septum nasi upon either side. The nose itself was swollen and painful, and a muco-purulent discharge was flowing from the passages. The boy's temperature was 100.4° , his tongue furred, and his bowels constipated. A diagnosis of bilateral abscess of the septum (traumatic) was made, and immediate evacuation of the pus advised. The parts were freely swabbed with a ten per cent. solution of cocaine, and then sprayed with a warm one in two thousand solution of bichloride of mercury. A free incision was made over the most prominent part of both swellings, and a large quantity of thick, creamy pus evacuated. The abscess cavities were washed out with bichloride of mercury solution, and then lightly packed with iodoform gauze. A careful examination with the probe was made; but no fistulous communication could be detected between the two abscesses. The amount of packing was daily reduced until all traces of suppuration had ceased. A perfect recovery, without the slightest deformity, resulted.

A CAUTION IN THE USE OF LARYNGEAL SPRAYS.

By Dr. DUNDAS GRANT.

A VERY neat and efficient spray has been for some time before the profession, in which the distal half of the spray tube is detachable by means of a simple plug joint, and thereby capable of being turned upwards,



DAVOL RUBBER CO.

downwards, or to either side, according to the requirements of the case. The weak point is naturally the plug, and a mishap arising from the unexpected dissolution of continuity at this point has led the writer to insist that the plug should be replaced by a screw. The accident which led to this was the swallowing of the tip by the patient during the process of spraying the larynx. Singularly little discomfort was produced, and

so quickly did the tube disappear that it seemed hardly possible to believe what had happened. The object swallowed was a metal tube of the thickness of a goose quill, about two inches in length, and having its anterior extremity bent at nearly a right angle for a distance of about half an inch. On laryngoscopic examination no trace of it could be seen either in the larynx or trachea, and an attempt was made to verify its presence in the œsophagus by means of a sound, as also to fish for it by means of forceps. The result being negative, it was assumed that the foreign body had entered the stomach. In view of this possibility an emetic was dismissed from consideration for fear of laceration of the viscus, and the patient was ordered a diet suitable for covering the object in its passage through the alimentary canal. A few hours later the patient returned, stating that he felt uncomfortable sensations at the epigastrium, and it was decided to submit him to an examination by means of the Röntgen rays.

While the preparations for this were in progress the patient was describing in a somewhat animated fashion the discomfort which he experienced, notably the increase of pain at the epigastrium when he bent forward. In his anxiety to demonstrate this he bent his body to a considerable extent, and while he was doing this the spray tube was forcibly expelled from his mouth on to the floor. Apparently it had not got beyond the cardiac orifice.

Mr. Rogers, of Oxford Street, purveyor of the spray in question, at once stopped the sale of those in which the plug joint was present, and proceeded to have others constructed in which safety was absolutely ensured by the use of a screw, without any sacrifice of the delicacy of the instrument, of which an engraving is appended.

ON ACUTE LABYRINTHITIS FOLLOWING MUMPS.

By Dr. DUNDAS GRANT.

THE obstinate form of deafness known to occur occasionally as a sequela of this common and somewhat mysterious complaint, has been recorded by many observers who have been bound in honesty to content themselves with asserting the incurability of the complaint. The narration of a case treated with success by F. W. Jollye, F.R.C.S. ("Archiv. of Otol."), seems to us to merit particular attention. The narrator was fortunate in having the opportunity of treating the case from its commencement; the aurist as a rule only meets these cases when the mischief is beyond therapeutic control. Within a few weeks after the occurrence of the attack, Mr. Jollye decided to administer pilocarpin with a result which amply justified the proceeding, because we find that at the end of three weeks the patient could hear the watch when pressed upon the mastoid, and could stand alone, although at the commencement of the attack she had to be held up to prevent her falling. For another fortnight she took a mixture containing small doses of sulphate of quinine (one-third of a grain) with nitrate of pilocarpin (one quarter of a grain), with the result of a distinct improvement in hearing. She gradually improved both in her gait and in her hearing power, and when seen a

year and a half later appeared to be possessed of perfect hearing on both sides.

The abstractor has been long convinced of the advisability of adopting a sialogogue treatment in cases of mumps, having made experimental trial on a number of children affected with this disease when he was engaged in family practice. He prescribed belladonna in one set of cases, and jaborandi in the other, with the result that the course of the affection was materially shorter and more favourable in the latter. He would plead, therefore, for the routine adoption of jaborandi or its alkaloid pilocarpin in cases of epidemic parotitis, especially in view of the possibility of infection of the labyrinth, which might thus be met by the use of the drug best calculated to combat it.

SOCIETY'S MEETING.

SOCIETY OF LARYNGOLOGY, OTOTOLOGY, AND RHINOLOGY OF PARIS.

January 14th, 1898.

M. CHATELLIER, *President, in the Chair.*

Further Cases of Otitis Media Sicca treated by Clearing Out the Petro-Mastoid.

M. A. MALHERBE reported the results of five new cases treated by the method communicated by him to the Surgical Congress, 1897 ("Revue de Chirurgie," June, 1897), making twenty-one cases in all.

Case 1. A lady of thirty-one. Chronic catarrh on the right side, following old suppuration. Deafness and tinnitus.

<i>Before operation.</i>	<i>Sixteen days after operation.</i>
Acoumeter—9 centimètres	4 mètres.
Whisper—16 ,,	80 centimètres.
	Tinnitus quite ceased.

Case 2. A man of twenty. Chronic dry otitis media. Right side.

<i>Before operation.</i>	<i>Seven weeks after operation.</i>
Acoumeter—4 centimètres	70 centimètres.
Whisper—Close to auricle	55 ,,

Case 3. A man of twenty-four. Chronic dry otitis media. Left side.

<i>Before operation.</i>	<i>Six weeks after operation.</i>
Acoumeter—Not heard by air conduction...	3 centimètres.
Whisper—Not heard.....	6 ,,
Speech—13 centimètres	65 ,,

Case 4. A lady of fifty-six. Chronic dry otitis media with almost total deafness on the left side.

RIGHT EAR.

<i>Before operation.</i>	<i>Four weeks after operation.</i>
Acoumeter—Not heard	6 centimètres.
Whisper—Scarcely heard	7 "
Speech—16 centimètres	1 m. 8 cm.

Case. 5. A lady of thirty-six. Chronic dry otitis media with almost complete deafness on the right side. Tinnitus.

LEFT EAR.

<i>Before operation.</i>	<i>Four weeks after operation.</i>
Acoumeter—Not heard.....	4 centimètres.
Speech—15 centimètres	50 "

These results, though not the best obtained by the author, have the advantage of not occurring in picked cases. In two instances the improvement was quite satisfactory; in the remaining three the result was not great, but it should be remembered that in these the deafness was extreme. The *rationale* of the operation is based on the hypothesis that the membrane and ossicles are not essential for the transmission of vibrations to the internal ear. Their *rôle* is merely to convert movements of large amplitude and small intensity into movements of small amplitude and great intensity. The fact that hearing is not completely lost when the stapes is firmly ankylosed, shows that aërial vibrations can be communicated to the internal ear through the membrane of the fenestræ rotunda. The object of the operation is then to admit sounds without unnecessary obstacle to the fenestræ. The results of the operation must always be dependent on the degree of disease about these important parts. If operation is only undertaken where some degree of hearing by aërial conduction remains, some improvement is always to be looked for.

DISCUSSION.

M. GEORGES GELLÉ, jun., was anxious to hear the opinions of his colleagues, as he was somewhat sceptical as to the results detailed, and was inclined to think the examinations prior to operation lacked completeness.

M. CHATELLIER proposed the nomination of a committee to inquire into the matter.

M. LUC was sceptical as to any durable results accruing after operation on cases of chronic deafness, other than those dependent on previous suppuration. The relationship of sclerotic changes in the ear to gout and arthritism made it extremely probable that the diathesis would reassert itself in the organ of hearing, and he thought that M. Malherbe had been premature in publishing his results.

M. MALHERBE considered M. Luc's objections correct; at the same time he repeated that he had chosen his cases, operating especially upon young individuals, and that in almost all instances a noticeable improvement had resulted.

M. CASTEX had not employed M. Malherbe's method, but he had removed the malleus through the meatus, and also the malleus and incus after reflection of the auricle. His results had been very diverse, and in

half the cases no improvement of hearing or tinnitus had followed. A few cases had, however, done well.

Case 1. A girl of twenty-one. Sclerosis on both sides. Removal of incus and malleus on the right side.

RIGHT EAR.

Before operation.

Five months after operation.

Speech—2 mètres15 mètres.

Whisper— $\frac{1}{2}$ a mètre15 „

The left ear had also improved, though not operated upon. Politzerization had, however, been practised.

Case 2. A man of fifty-five. Labyrinthine sclerosis. Removal of malleus on the left side.

Before operation.

After Operation.

Speech—8 mètres65 mètres.

Whisper—25 centimètres 9 „

Tinnitus very slight.

M. MARTIN thought the procedure rested neither on an anatomical nor a physiological basis, and that neither diagnosis nor prognosis was at present to hand.

With M. Malherbe's concurrence a commission was appointed, consisting of MM. Castex, Lermoyez, Luc, Ménière, and Saint Hilaire, to examine and report on the cases of M. Malherbe before, during, and after operation.

Syphilitic Osteoperiostitis of the Frontal Bone, simulating Acute Sinusitis Frontalis. Mercury and Iodine Treatment. Cure.

M. PAUL VIOLLET. The case of a woman of thirty-seven, who came to the hospital with a very large fluctuating swelling in the left infraorbital region and thickening of the bone in the vicinity. For five days pus had been discharging from the nose, first on the left side, then from both nostrils. The nose wall full of crusts. Transillumination of the sinus gave no indication. After cleansing the nose a septal perforation was found, together with destruction of the left inferior turbinate. A large smooth sessile swelling occupied the naso-pharynx. In spite of the patient's denial of syphilitic antecedents, a treatment with mercurial inunctions and iodides internally was instituted, and this was rapidly followed by a favourable result. A slight prominence in the frontal region persisted. The great rapidity (five days) with which this large purulent collection developed seemed to point to a diagnosis of acute sinusitis frontalis.

Orthoform in Vasomotor Rhinitis. (Nasal Hydrorrhœa, Hay Fever.)

M. LICHTWITZ. In view of the qualities of orthoform as a safe local anæsthetic, the author conceived the idea of making use of it in hay fever and hydrorrhœa, diseases which are characterized by hyperæsthesia of the nasal mucosa leading to paroxysmal crises and hypersecretion, which in turn augments the congestion and hyperæsthesia. Cocaine has been widely used to break this vicious circle, but the dangers attending the prolonged use of this drug, as well as its short-lived action, renders its

employment undesirable. Orthoform is sufficiently anæsthetic, its action is prolonged, and it is non-toxic, and therefore seems to supply the good qualities of cocaine without its drawbacks.

The drug has been tried in three cases, and confirms this view. In the most marked of the three (that of a man of thirty-four with a six years' history of frequent and serious hydrorrhœa, paroxysmal sneezing, etc.) a single insufflation of orthoform not only cut short a crisis, but seems to have cured the trouble altogether. The crises which used to occur every week or ten days, and to continue for something like a week, night and day, have completely ceased since the single application made nearly three months ago.

New Instrument.

M. FURET showed a punch forceps for removal piecemeal of hypertrophied lingual tonsils. The instrument acts well, and gives much less pain than the cautery.

Ernest Waggett.

ABSTRACTS.

DIPHTHERIA, &C.

Vincent.—*On a Particular Form of Diphtheroid Angina.* ("Angines à Bacilles fusiformes.") "Arch. Intern. de Lar., O., R.," Jan., Feb., 1898.

It is well-known that a variety of micro-organisms can develop on the surface of the pharyngeal mucosa, and give rise to pseudo-membranous lesions more or less resembling those of diphtheria. A diagnosis can always be made by bacteriological examination. The particular variety now under discussion appears to be fairly common, but does not seem to have met with special recognition. Bernheim, in his paper on anginas and ulcero-membranous stomatitis, describes a microbe resembling that which the author has studied, and this fact has induced him to publish the present work. Clinically, this diphtheroid angina affects, as a rule, one tonsil only and the neighbouring pillar. At the onset the tonsil is covered with a white, or grey, thin and soft pseudo-membrane, which is easily detached. Below it the surface is eroded and bleeds readily. The edges of this spot of membrane are irregular, and appear to be more adherent than the central parts. After removal regrowth is found next day.

In serious cases the membrane covers a ragged ulcer. About the third or fourth day the membrane is found to be thick, soft, and almost caseous superficially, the breath is disagreeable or fœtid, and the mucosa of the adjoining parts is cedematous and red. Dryness of the throat and dysphagia are complained of. The submaxillary lymphatic glands are but little affected, except in severe or neglected cases. Suppuration in the glands has not been observed. Febrile symptoms are always present though often slight. Temperature frequently reaches 38.5° or 39° C.; this, however, is reduced almost to normal, when local antiseptics are employed, as early as the third day, though the false membrane persists. About the eighth or tenth day the tonsil clears up, and repair of the ulcerated surface is rapid. Sometimes membrane is seen as late as the fifteenth day. Unlike

what is so often seen in diphtheritic angina, the false membrane does not spread to the opposite side.

Diagnosis must rest upon microscopic examination of the exudate. When stained with dilute Ziehl's fuchsine, or with thionine, two species of micro-organisms are always found predominating.

1. A peculiar bacillus, easily recognized from its length (ten to twelve μ), bulged in the centre and tapering off at either extremity.

2. A slender spirillum, more difficult to stain, and closely analogous to that found in tartar, normal saliva, etc. This spirillum is often extremely abundant, but does not bear the same relation to the angina as the bacillus, which has sometimes been almost the only micro-organism present. The development of the spirillum would seem to be dependent on the presence of the latter, and is sometimes found associated with streptococci also. The peculiar bacillus the author has named, from its shape, "*bacille fusiforme*." Short forms occur—sometimes united in pairs, end to end. Extra long forms also occur; and they may even be found as filaments, which display their identity by the taper extremities and granulated protoplasm. The bacillus is especially abundant at the onset of an attack, and is found either uniformly distributed over the field of the microscope or collected into groups and confluent masses, and even in bundles, with a radial arrangement of the separate elements.

Involution forms are often seen; and it is very common to find vacuolated individuals, the clear, rounded spaces (to the number of two or three) not staining with the usual spore stains. In the filamentous the vacuoles are numerous; and in some of the involutious forms the centre is much swollen and takes no stain.

The "*fusiform bacillus*" is not stained by Gram's method; and the same applies to the associated spirillum. The author has failed to obtain a culture of the bacillus, after trying a number of media both in air and in vacuo. Inoculation of the faucal and buccal mucosa in animals has been negative.

The bacillus seems to exist in small numbers on the surface of the tongue and tonsils in healthy persons. The characteristic form, large size, non-coloration by Gram, and impossibility of culture, differentiates this bacillus from that of diphtheria; and it is interesting to note that these peculiarities, together with the association with a spirillum, offer a certain resemblance to those of the bacillus of hospital gangrene (wound diphtheria) described by the same author.

The most successful clinical results would seem to follow application of tincture of iodine, with boric gargles. The disease always clears up without complication.

Ernest Waggett.

MOUTH, &c.

Armstrong, G. E.—*Excision of Tongue*. "Montreal Med. Journ.," Jan., 1898.

IN June, a man, age not given, presented himself with a small epithelioma of the tongue on the right side, opposite the molar teeth. He declined operation. In October he returned. Extensive infiltration had taken place. The whole floor of the mouth was involved. Had constant pain, and begged to have his tongue removed. He could not speak with distinctness. Dr. Armstrong performed tracheotomy and excised the tongue at the one operation. As the lymphatic glands of the neck were very much enlarged, the lateral incision of Kocher enabled him to remove them as well as the maxillary. So far the patient has done well.

This was unavoidably a late operation. The author lays stress upon the

importance of early diagnosis and early operation, with complete extirpation of the infected area.
Price-Brown.

Bowen, Jas. J.—*Hypertrophy of the Lingual Tonsil.* "New York Med. Journ.," Dec. 25, 1897.

HYPERTROPHY of the lingual tonsil differs from that of the faucial tonsil in being a disease of adult life. Its etiology is, in some particulars, definite—in others obscure. Sometimes, following diphtheria and scarlet fever, it is very common in those using spicy and other irritating articles of diet. Tobacco and alcohol are also contributing causes. The author details the main symptoms of the disease; and his experience does not confirm the observation made by Lewin in the "Laryngoscope" of July, 1896, that the disease is rather frequently associated with goitre. Removal of the hypertrophied organ is the ideal method of treatment.

Delavan, D. Bryson.—*Tertiary Ulceration, simulating Sarcoma of Tonsil.* "New York Med. Journ.," Dec. 4, 1897.

MICROSCOPICAL examination alone revealed the nature of the lesion in the well-marked proliferation of the tonsillar endothelium. The case was exceedingly obscure; but the above fact, combined with the stationary condition of the disease, afforded sufficient grounds for a diagnosis which subsequent antisyphilitic treatment—fortunately for the patient—fully confirmed.

Elder, J. M.—*Removal of Foreign Body from the Cheek.* "Montreal Med. Journ.," Jan., 1898.

REPORT of removal of a pen from the inside of the cheek of a young man, aged twenty-two, after it had been embedded in the tissues for seventeen years.

Price-Brown.

Fraenkel, A. (Vienna).—*Operation for Carcinoma of the Tonsil.* "Münchener Med. Woch.," April 5, 1898.

THE author recommends in localized carcinoma of the tonsil, where formerly resection of the jaw and previous tracheotomy were done, that the external carotid should be ligatured, and the growth removed by the mouth. He has done this with good results in two well-described cases. Hæmorrhage was not severe: application of a suture was sufficient.

Guild.

Freudenthal, W.—*Salivary Calculus.* "Journ. Am. Med. Assoc.," Feb. 26, 1898.

HE reviews the literature on the subject, and describes two cases of his own. One patient came to him with an abscess under the left side of the tongue of two weeks' duration. After opening it he found a calculus in Wharton's duct, and another the size of a cherry embedded in the substance of the submaxillary gland.

The other patient had noticed a swelling under the tongue for two and a half years, which had grown steadily and occasionally gave pain. During the night he snored so loudly that it was necessary to waken him, and would become markedly cyanotic. A large swelling was found under the right side of the tongue in which fluctuation was present, and a hard mass could be plainly felt within. He refused operation. Several weeks later a note from his physician announced his death. He had imbibed more freely than usual, and retired. His wife found him breathing with difficulty and cyanotic, and called a physician, but he died from suffocation before help arrived. At the autopsy an almond-shaped calculus was found surrounded by a large pus cavity. His death was due to his inability to evacuate the pus as usual.

Dodd.

Hartman, J. H.—*A Case of Angioma of Tonsil, with Recurrence of the same Three Years after Removal.* "New York Med. Journ.," Dec. 25, 1897.

THIS rare disease in the case quoted was confined to the left tonsil. The growth was removed very slowly with a wire *écraseur*.

Hirsch, Wm.—*The Question of Sensory Fibres in the Hypoglossal Nerve.* "New York Med. Journ.," Jan. 8 and 22, 1898.

THE writer does not consider it conclusively proved that the twelfth nerve takes any part in the sensibility of the tongue. On the other hand, in the "New York Med. Journ.," Jan. 1st and 22nd, 1898, S. J. Meltzer supports Lewin's theory to the effect that the hypoglossal distributes sensory fibres to the tongue. Meltzer, basing his opinion on actual experiments, concludes that the amount of sensibility thus imparted is small, and is wholly effected by the branches of the cervical nerves which join the hypoglossal.

Mongour.—*Diphtheritic Stomatitis.* "Presse Méd.," Nov. 27, 1897.

THE case of a child four years of age, with three small patches of pseudo-membrane on the tip of the tongue and buccal surface of the lips. These patches, which had already existed several days, resisted all the usual local applications. A gelatine culture of the membrane gave an almost pure growth of *Klebs bacilli*, and a single dose of antidiphtheritic serum produced cure in four days.

Ernest Waggett.

Plicque.—*Pharyngeal Tuberculosis in Children.* "Annales des Maladies de l'Oreille," etc., Nov. 1, 1898.

PHARYNGEAL tuberculosis is not so common in youth as in adults. It can be derived from the air passages, or can localize itself primarily in the pharynx and spread to the uvula and tonsils, sometimes to the epiglottis and naso-pharynx. Diphtheria and lupus come under consideration in the differential diagnosis. Pharyngeal tuberculosis often shows a false membrane like diphtheria, which rapidly disappears with lactic acid. The absence of Loeffler's bacillus, the presence of tubercle bacillus, slight fever, grey translucent nodes like millet seeds, caseous disintegration, and slow extension differentiate it from diphtheria. In lupus the nodules are larger, the cervical glands are smaller, there are isolated cicatrices, and usually other parts affected (face, nose). Difficulty in swallowing is frequently severe, and demands artificial nourishment. Every case published has ended fatally; the course is often very rapid.

Guild.

Schwartz.—*Hairy Pharyngeal Polypus.* "Munchener Med. Woch.," April 12, 1898. "Zeitschrift für Ohrenheilk.," XXXII.

A PEDUNCULATED tumour the size of a hazel nut was removed with the snare from the posterior surface of the soft palate of a girl three years old, who had the appearance of adenoids. Such tumours appear microscopically like lipomata covered with skin (*cutis*).

Guild.

Stetter.—*Glossitis Papillaris and Tuberculosis.* "Münchener Med. Woch.," March 22, 1898.

THE author found in four cases of slight dysphagia an enlargement of the circumvallate papillæ. Microscopic examination of the excised papillæ showed complete cornification—instead of normal epithelium a covering of flat-levelled cells. The centre of the small tumour was formed by a vascular process of connective tissue, *i.e.*, consisted of a hard papilloma. He further describes a tubercular process in the region of the circumvallate papillæ, and gives its symptomatology. It is recognized by a slightly indurated base, smooth cut edges, and especially by small yellow points on its base and around it.

Guild.

NOSE, &c.

Armstrong, H. L.—*Etiology of Chronic Broncho-Nasal Catarrh.* "New York Med. Journ.," Jan. 15, 1898.

THE more direct antecedents are injuries leading to nasal obstructions. "Mouth breathing" is also a contributing cause. In the more remote etiological factors dyspepsia, in its broadest sense, is included.

Carnot.—*Gelatine as a Hæmostatic.* "Presse Méd.," Sept., 18, 1897.

IN an article dealing with gelatin solution used as a hæmostatic in general medicine and surgery, M. Carnot refers to its value as a local application. He has obtained rapid and permanently successful coagulation in cases of severe epistaxis in "bleeders," in hæmorrhage after tonsillotomy, etc., by syringing or application on wool of a solution of gelatine. The formula employed has been five to ten per. cent. of gelatine in sterilized water or normal saline, and the addition of an antiseptic has been found not to interfere with the coagulative property of the solution.

Ernest Waggett.

Casselberry, W. E.—*Atrophic Rhinitis: its Nature and Symptoms.* "N.Y. Med. Journ.," Nov. 20, 1897.

THE author adopts the classification into (1) simple dry rhinitis and (2) ozæna, which has reference to the age at which the disease first appears and the presence or absence of fœtor, the former occurring more often about middle life, and the latter in childhood. Though fairly distinctive in most cases, the two varieties have, however, many features in common, viz., an atrophic condition of the faucial, lingual, and post-nasal tonsils, and of the adenoid glands of the pharynx and local peripheral sensory nerve fibres, with a characteristic "facies." Such widespread nutritive disturbances suggest, according to some observers, a central trophoneurosis. Unilateral disease due to septal deformity cannot be properly regarded as atrophic, as the correction of the deviation will in most cases lead to a cure. Syphilis often acts as an antecedent of dry rhinitis, as also do gout and alcoholism, while a tubercular taint is frequently an item in the history of the ozenic variety. The atrophic condition is always preceded by a hypertrophic stage, not, however, in every case well marked, the change from the latter to the former being comparable to that seen in the cirrhotic liver. This view of the transition between the hypertrophic and atrophic stages is weakened by certain facts, such as the occurrence of ozæna in very early life. The writer enumerates the various views held as to the causation of ozæna, e.g., its dependence on neighbouring suppuration (Michael and Grünwald); on a microbe; on certain hyaloid bodies, probably parasitic, etc. He details the symptoms of the two varieties, and quotes illustrative cases.

Dodd.

Delavan, D. Bryson.—*A New Method for the Relief of Certain Enlargements of the Turbinate Bodies.* "New York Med. Journ.," Dec. 11, 1897.

THIS consists of a submucous incision, with the object of obliterating a certain number of the blood vessels. Cocaine is first applied; and, by means of a lance-pointed needle, a spot in front of the proposed line of incision is selected, and the point of the needle introduced obliquely through the mucous membrane and carried backwards parallel with the surface, and then, with a slight sweep, is brought out again through the original opening, which should be as small as possible. The advantages claimed for the method are: ease of application;

freedom from irritating effects; and preservation of the normal condition of the mucous membrane.

Glasgow, Wm. C.—*Angioma of the Nose.* "New York Med. Journ.," Jan. 8, 1898.

A CASE of this rare disease is recorded—the only one of the kind in the writer's experience of twenty-seven years.

Grayson, Charles Provost.—*Some Notes concerning the Influence of Sexual Excitement upon Intranasal Disease.* "Journ. Am. Med. Assoc.," Feb. 19, 1898.

HE describes several patients suffering from congestion of the nasal mucous membrane who were worse when exposed to sexual excitement, and would not yield to treatment until placed under different conditions. This was especially noticeable in young neurotic individuals. This cause should be kept in mind when studying some of these persistent forms of nasal irritation.

Hollaender. — *Treatment of Lupus Vulgaris with the Hot Air Current.* "Presse Méd.," Oct. 30, 1897.

THE rationale of the treatment is the determination of a slow and progressive mortification of the lupous infiltration. The details as to time, pain caused, etc., are not given. Air at a temperature of about 300° C. is driven, by means of a bellows attached to a heated metal tube, into the affected part. Experience has proved that a very good scar results, and a photograph is given of a severe case of facial lupus so treated.

Ernest Waggett.

Hopkins, F. E.—*Adenoids and Hypertrophied Tonsils in Children.* "New York Med. Journ.," Dec. 18, 1897.

THE author emphasizes the influence of the disease upon the auditory apparatus. Aural complications occur in ninety-five per cent. (Woaks), seventy-five per cent. (Urbantschitsch), and seventy per cent. (Meyer). He details at some length the whole clinical picture of the disease under various headings, and includes heredity as no unimportant factor in the etiology. Complete extirpation is the only rational treatment; and for this purpose the author prefers Mackenzie's amygdalotome, and always operates under full anæsthesia.

Kedel (Hanover).—*Congenital Nasal Clefts and their Treatment.* "Münchener Med. Woch.," Mar. 1, 1898.

IN a child, eleven weeks old, the nose was separated by a broad cleft; the cleft was filled by a soft, semi-globular tumour. In addition there was a harelip and a defect in the left forearm. The operation was done in two sittings. The harelip was first operated on, and the tumour removed. The cartilaginous nasal septum was cleft in two parts, and on both sides formed the internal wall of the nostrils. At the second sitting the two halves of the nose were sutured together, at which the septum cartilaginum had to be used to form the *alæ nasi*. The tip of the nose was formed from a suitable flap of the preserved tumour covering. The result was satisfactory. Beneke examined the tumour microscopically; it was formed of skin, adipose tissue, stripped muscle, bone, and contained lymph and epithelial cysts.

Guild.

Lockard, L. B.—*Transillumination: its Fallacy as a Diagnostic Means in Diseases of the Maxillary and Frontal Sinuses.* "New York Med. Journ.," Nov. 27, 1897.

THE almost universally accepted inferences derived from transillumination are

questioned by the writer. He enumerates at some length the various atypical conditions of the maxillary and frontal sinuses, and shows how, by accepting the conclusions arrived at in such cases from transillumination, serious diagnostic errors may be committed, leading to unwarrantable operative procedures. Transillumination may be a valuable adjunct to a definite diagnosis; but, *per se*, it is a guide that should be used with great care and reserve.

Mackenzie, John N. (Baltimore). — *Remarks on Atrophic Endorhinitis.* "New York Med. Journ.," Nov. 20, 1897.

PARTICULAR stress is laid by the author on the structural aspect of the turbinal bodies, their completeness, and specific physiological function. He distinguishes between "simple atrophy" and "atrophy with degeneration," and suggests the term "sclerosis" as best descriptive of the latter condition. Confining his remarks solely to atrophy with degeneration, he gives as important etiological factors, chronic irritation produced by inflammation of nasal mucous membrane, infection as in syphilis and tubercle, and intoxication as in alcohol. After discussing the chronological relationship of the hypertrophic and atrophic stages of the sclerotic process, he is led to conclude from clinical and pathological evidence that the hypertrophic is the initial stage in the morbid process, and that the rapidity with which, in some instances, the hypertrophic passes into the atrophic stage is proportionate to some constitutional taint, such as syphilis.

Milligan, W. — *The Etiology and Treatment of Suppurative Disease of the Frontal Sinuses.* "The Lancet," Feb. 19th, 1898.

IN this paper the anatomical relation of the parts is first dealt with, special reference being made to the importance of the fronto-ethmoidal cells both scientifically and clinically. The occurrence of the occasional continuation of the infundibular tract into the opening of the maxillary antrum is pointed out, and its importance is emphasized. Acute catarrhal and acute suppurative frontal sinusitis is considered in some detail, and various methods of treatment are described. The etiology of latent empyema of the sinus is next considered, and the difficulty of its accurate diagnosis pointed out. Its frequent co-existence with suppurative ethmoiditis and the relation of this to subsequent treatment is emphasized. Operative treatment and non-operative treatment is then discussed. Regarding the non-operative treatment, antiseptic lotions, syringing by means of a specially constructed canula *per vias naturales*, pinning down redundant mucous membrane by means of an escharotic, the use of antistreptococcic serum, and the employment of oxygen gas may be tried.

Regarding operative treatment, anterior turbinectomy (middle turbinated body) and various methods of external operation are described. A median incision is advocated, and the importance of securing free and efficient fronto-nasal drainage is strongly insisted upon. The various methods of dealing with the mucosa lining the sinus are considered, and complete curettement advised.

Of fifteen cases operated upon nine of the patients were males, six were females. In thirteen cases the sinusitis was unilateral, in two cases bilateral. In five cases the right sinus was affected, in twelve cases the left. In all the cases with the exception of one (a sub-acute case), other accessory sinuses were similarly involved, and a statistical review of the sinuses implicated is appended.

W. Milligan.

Moure, E. J. — *Treatment of Ozena.* "Deutsche Med. Woch.," Apr. 7, 1898.

THE author criticises the new methods of treatment for ozena. He does not approve of Gottstein's method. He thinks that the use of diphtheria serum

rests on an insecure basis, and is sceptical of the results obtained by electrolysis. He recommends massage after the nostrils are cleansed, and uses for this purpose an instrument covered with wool dipped in—

Iodine	'1—'25	Or—	
Potassium iodide	'2—'3	Menthol	1'0—2'0
Trichloracetic acid ...	'15	Eucalyptus	'1
Glycerine	60'0	Ol. vaselini	60'0

The secretion is then removed with a syringe, and powder containing five to twenty-five per cent. of powdered silver nitrate is applied. With this treatment he obtained improvement in a large majority of his cases, and frequently a complete cure. *Guild.*

Nichols, James E. H.—*Sarcoma of the Nasal Passages.* "New York Med. Journ.," Jan, 8, 1898.

FOUR cases of this disease are recorded by the writer.

Oppenheimer, Seymor.—*A Study of the Nares and Pharynx in a Case of Hæmophilia.* "New York Med. Journ.," Dec. 4 and 11, 1897.

THE writer gives a very interesting history of a case which presented a complexity of symptoms. Examination of the nose showed the mucous membrane sodden from blood and serum, and a sclerosis of inferior turbinal and of anterior third of middle turbinal, the hinder end of the latter being somewhat enlarged. Ulceration over a small area of the left side of septum nasi was also observed, as well as a general sclerosis of pharynx, naso-pharynx, and tonsils.

Park and Wright (New York).—*Microbes of the Nose in Normal Conditions.* "Annales des Maladies de l'Oreille," etc., Nov. 1, 1898.

THE authors, from their investigations, agree with Klemperer, that healthy noses, even in the interior parts, are not free from germs, and that the nasal secretion has no bactericidal action. *Guild.*

Park, W. H., and Wright, J.—*The Microbes of the Nose in Health.* "Annal. des Mal. de l'Oreille," Feb., 1898.

THE authors report in a short paper the results of their experiments which were undertaken in view of the divergence of opinion expressed by various authors on this point. As Thomson and Hewlett's results seemed to indicate some source of error in Wright's previous research, particular attention was paid to the danger of contamination of specimens in their passage through the vestibule. A series of thirty-six normal individuals were chosen, the vibrissæ were removed with sterilized scissors, and the skin of the vestibule washed with 1 in 2000 perchloride. A freshly sterilized speculum was used for each patient, and the mucus was taken from between the septum and inferior turbinate as far back as possible, either with a platinum loop or a cotton swab sterilized and passed through a flame. Tubes of gelatine and serum or agar and serum plates were employed.

The results of culture were as follows:—

No bacteria in the cultures in	6 cases.
Less than fifty colonies in	8 "
Between fifty and one hundred colonies in ...	8 "
More than one hundred colonies in	14 "

	—	36 "
Sterile	6	
Non-sterile	30	

In five out of the six sterile cases the mucus was withdrawn on the platinum loop, and the quantity was so small that this may in part explain the negative results.

Two rabbits were killed, the crania contents removed antiseptically, and the nose entered from the upper surface. Cultures of the nasal mucus contained numerous colonies.

Differentiation of the micro-organisms was not attempted, except in the case of streptococci, which were never met with. This result contrasts markedly with cultures made from children living in a "home," for among them streptococcus was present in sixty per cent. In none of these cases was the nasal mucus quite normal in character.

With regard to the supposed bactericidal property of nasal mucus, the authors object that diphtheria or pseudo-diphtheria bacilli persist in the nasal mucus of patients convalescent from benign nasal diphtheria. The result of a test of this supposed quality in the nasal mucus of the rabbit is striking. One drop of an extremely virulent culture of streptococci was instilled into the noses of two rabbits. Both animals died with general septicæmia within three days. The cocci had penetrated the mucosa and reached the tissues of the pharynx.

A specimen of nasal mucus repeatedly sterilized by heat (55° C.) was found to have no apparent bactericidal effect on the bacillus of diphtheria, pseudo-diphtheria, staphylococcus, streptococcus, and a coccus found in normal mucus from the nose. A similar result was obtained with non-sterilized mucus, though this had a markedly bactericidal effect on bac. anthracis.

These results are therefore at variance with both those of Wurtz and Lermoyez and of Thomson and Hewlett. At the same time they demonstrate that the nasal fossæ are not so rich in microbes as was formerly supposed *à priori*. This, no doubt, is due—

1. To the action of gravity, causing a constant flow of fresh mucus from the upper parts which are not freely accessible to the air currents.
2. To the action of the cilia, which aids the effects of gravity.
3. To the fact that the mucus, though not bactericidal to most microbes, is not a good culture medium.
4. To the filter action of the vibrissæ (these hairs are absent in children and sparse in women).
5. To the fact that inspired air usually contains few pathogenic germs.

The authors conclude that the nasal mucus is ineffectual as a safeguard against the bacteria which can develop in the blood, or the secretions of other individuals, and that it is unable to cope with virulent organisms introduced upon nasal instruments.

Ernest Waggett.

Park, William H., and Wright, Jonathan.—*Nasal Bacteria in Health.*
 "New York Med. Journ.," Feb. 5, 1898.

AN examination of the secretions of ten healthy noses revealed a number of various forms of bacteria, of which the staphylococcus pyogenes was the most abundant. The investigations of the authors do not support the conclusions either of Thomson and Hewlett, or of Wurtz and Lermoyez, yet they admit that the healthy nasal mucous membrane is not so full of germs as at first believed. This comparative scantiness in micro-organisms they attribute to different causes, amongst which are (1) the action of gravity draining away the serum, (2) the cilia, and (3) the non-adaptability of nasal mucus for bacterial growth.

Pierce, Norval H.—*The so-called Bleeding Polyp of the Septum.* "Journ. Am. Med. Assoc.," Feb. 19, 1898.

HE reports two cases. One, a child six years old, had been operated on for a tumour of the septum which had bled freely at intervals for two months. It was pronounced sarcoma and toxins used. She was discharged as cured, but the bleeding having returned the author was consulted. A tumour, the size of a pea, was projecting from the septum at about the point where the triangular cartilage joins the vomer. It was a deep blue, intermingled with red, and bled freely upon touching it. After removal and cauterization it did not return.

The other was a girl, fifteen years of age, giving a history of severe hæmorrhages from the nose at about the time of her monthly periods. A pedunculated tumour, about the size of a pea, was projecting from the septum a little higher up than the former case. It was removed with a snare, but not cauterized. She disappeared, but returned a year later with a history of frequent and severe epistaxis. She was very anæmic, and the tumour had recurred at the same spot. After removal and cauterizing base it did not return. The patient soon recovered from the anæmia. Microscopical examination showed them to be telangiectomata.

Preysing.—*Tubercular Tumour of the Nasal Septum.* "Munchener Med. Woch.," April 12, 1898. "Zeitschrift für Ohrenheilk.," XXXII.

A GIRL, sixteen years old, had been operated on before for tubercular caries. A tubercular tumour developed on the septum; it was removed with an electric snare and the cautery applied. A tubercular gland with a fistula was removed from the chin. Tubercle bacilli were not found. Recurrence took place in three months, and was again excised. Cure. *Guild.*

Reerink.—*Sarcoma of Nose.* Verein Freiburger Aertze, "Munchener Med. Woch.," Feb. 22nd, 1898.

HERR REERINK showed a patient in whom temporary resection of the upper jaw had been done fourteen days before for tumour of the naso-pharynx.

Herr Hofrath Kraske operated. After a previous tracheotomy skin incision after C. O. Weber, the connections of the upper jaw were sawn through; the alveolar process was left. The resected upper jaw was turned out, causing incomplete fracture of the zygoma. The tumour had a fibro-cartilaginous basis, grew from the sphenoidal sinus, and extended into the antrum; it consisted of a vascular fibro-sarcoma. Hæmorrhage was severe in enucleating the tumour. A plug was introduced into the nostrils, and the upper jaw replaced; the skin and mucous membrane were sutured. Recovery was uninterrupted.

Discussion.—Herr Kellier reported several cases of fibroma where the galvanocautic snare was used successfully. If it is impossible to put a snare around the tumour it may be removed in smaller parts at intervals of eight to fourteen days, to allow inflammatory reaction to subside. Bleeding is usually profuse at the first attempt; careful plugging should be used. A few drops of chloride of iron can be put on the plug. The part in the naso-pharynx should be left till the last, as a post-nasal plug may be necessary. *Guild.*

Rice, Clarence C.—*Treatment of Atrophic Rhinitis.* "New York Med. Journ.," Nov. 20, 1897.

THE writer insists on the great importance of general constitutional treatment embracing active out-of-door occupations with proper hygiene and diet. Cigarette smoking is considered an important factor in the causation. The author reviews the various topical remedies used from time to time, such as mercuric bichlorid (one in four thousand and one in two thousand), iodoform, iodol, aristol, and salicylic

acid. A good many of these drugs have been employed on the doubtful assumption of the disease being dependent in some way on micro-organisms. The line of treatment suggesting the use of destructive agents is strongly condemned by the author. He considers as most effective the various oily compounds, which act as lubricants, sedatives, and vehicles if necessary for more active drugs. For nasal irrigation the smallest possible quantity of fluid is recommended. Thorough removal of dried crusts is absolutely necessary, and this can usually be done by spraying plain oil into the nose. Protuberant masses of the middle turbinal are best removed with scissors. The author shows much preference for friction with some stimulating disinfectant, and uses such rather than argent nitras, to remove the grey granular surface of the mucous membrane. For the latter purpose he has used with success a method of treatment which he terms "polishing the mucous lining of the nose." This consists in rubbing the membrane with hard pledgets of cotton wool, soaked in weak solutions of bichloride, or of borolyptol, or of boroformalin, for about half a minute at a time. After such thorough washing and stimulation of the diseased surface, the next most important procedure is lubrication with oils. Powders should be employed only in cases where there is a tendency to subacute inflammatory attacks with watery discharges, and for this condition the writer speaks highly of a combination of seventy-five per cent. compound stearate of zinc with acid. boric and twenty-five per cent. compound stearate of zinc with alum. The powder should be discontinued on the cessation of the discharge. The prognosis in these latter cases need not be very discouraging.

Roestel.—Medical Society of Hamburg. "*Münchener Med. Woch.*," Mar. 18, 1898.

ROESTEL showed a case after operation for complete atresia of the naso-pharyngeal space, which had resulted from hereditary syphilis (*tarda*). The symptoms were rhinitis, tubal catarrh, otitis media, anosmia, nasal obstruction. After cocaineizing, the adhesions between the palate and the posterior pharyngeal wall were separated by a metal bougie passed through the nose. Incision made through the mouth on the end of the bougie; through the opening a Nélaton was introduced. The occlusion was overcome and nasal respiration restored by a prothesis fixed to the upper teeth, with a spiral spring on its posterior part in connection with the platinum tube introduced into the wound. This procedure, owing to its simplicity, can be recommended for similar cases.

Guild.

Sanger (Magdeburg).—*On the Connection between Abnormal Width of the Nostrils and Disease of the Upper Respiratory Tract.* "*Centralblatt für innere Medicin*," 1898, No. 11. "*Munchener Med. Woch.*," Apr. 5th, 1898.

ABNORMAL width of the nasal fossa affords insufficient protection in breathing dry, cold, or dusty air. The frequency of this anomaly prompted the construction of an obturator, consisting of two plates and a U-shaped arch. The plates close the nostrils sufficient to allow of easy breathing with the mouth shut. From his experience the author considers the obturator sufficient to overcome the disadvantages of breathing through too large nostrils.

Guild.

Scheppegrell, W.—*Case of Recurrent Headache, each Attack being relieved by the Discharges through the Right Nostril of a Fluid from the Cranial Cavity.* "*Journ. Am. Med. Assoc.*," Feb. 26, 1898.

As the quantity of fluid discharged each time was of small amount he concludes that it must have been a cyst at the base of the brain, connected with the lymphatic system. The accessory cavities were all explored, but were not affected.

Theisen, C. F.—*Tuberculosis of the Nose, with Report of a Case of Primary Tuberculosis.* "Albany Med. Annals," Mar., 1898.

THE patient, a man aged thirty-six, a strong healthy man, contracted a severe head cold following an attack of *la grippe*, and became conscious some time afterwards of left nasal obstruction, accompanied by considerable secretion. The patient's family history was good, and the patient had himself enjoyed good health. There was, however, a doubtful history of syphilis. On examination the inferior turbinal and septal mucous membrane of the left nostril was inflamed. A growth somewhat larger than a small cherry, with an irregular surface, was found attached to the cartilaginous septum, attached by a broad base, not freely movable and firm to the touch. The growth was removed by means of a cold wire snare, and its attachment destroyed by means of the galvano-cautery. Microscopically it was found to be a granulation growth containing numerous bacilli. The area of its attachment was thoroughly treated by means of applications of lactic acid (forty to eighty per cent. solution) and iodoform insufflations. Complete cure resulted. The author remarks upon the rarity of primary nasal tuberculosis and upon the value of microscopic examination of portions of tissue removed. He also makes some pertinent remarks upon the differential diagnosis between nasal syphilis and nasal tuberculosis.

1. Nasal syphilis is always accompanied by a very severe inflammatory condition of the surrounding mucous membrane, not so as a rule in tuberculosis.

2. The favourite location for specific lesions is the bony septum, and in tuberculosis the cartilaginous.

3. In syphilitic bone destruction there is almost always a very offensive foetor, rare in tuberculosis.

4. In ulcerative nasal syphilis, as a rule, there is headache or trigeminal neuralgia; usually this is absent in tuberculosis.

W. Milligan.

Tissier, Paul.—*Tumours of the Nose and Accessory Sinuses.* "Ann. des Mal. de l'Oreille," Jan., 1898.

IN this paper will be found a useful *résumé* of the Continental literature of the subject. Not much that is new is reported. In speaking of the benign fibro-angiomas of the septum and of the nasal sarcomata in general, the author maintains that the fibroma, fibro-sarcoma, and round-celled sarcoma are diverse modifications of the same pathological process.

Ernest Waggett.

Wertheim (Breslau).—*On Complications after Intra-nasal Operation.* "Münchener Med. Woch.," April 12, 1898. "Zeitschrift für Ohrenheilk.," XXXII.

AFTER describing the natural protective mechanism of the nose, and examination of certain bactericidal properties of the nasal secretion, he reports two cases of complications after nasal operation: kidney infection after removal of the posterior end of the inferior turbinate, and lung infection after removal of nasal polypi.

Guild.

Wishart, D. J. Gilb.—*Nasal Obstruction arising from Septal Deformity.* "Dominion Med. Journ.," March, 1898.

A *RÉSUMÉ* of the various views regarding the etiology of this deformity is given, with a statement of the reflex effects which it produces. The different methods of treatment are mentioned. Preference is given to the use of the spokeshave. If this is ineffectual, the crucial incision, followed by the use of the splint, is advocated.

Price-Brown.

LARYNX.

Coosemans.—*Holocaine in Oto-laryngology.* "Rev. Hebdomadaire de Lar., Otol., and Rhinol.," Dec. 11th, 1897.

A SHORT *résumé* of this paper, which is here given *in extenso*, has appeared in a report of the July meeting of the Société Belge d'Otologie. The salt occurs as small, white, needle-shaped crystals, which are soluble to the extent of five per cent. in cold water. One per cent. solutions have been kept in open jars for two months without decomposition.

One per cent. solution causes no irritation of the conjunctiva, and five per cent. solution but a slight pricking and congestion. One per cent. solution causes complete anaesthesia of the cornea in five seconds, and this lasts for twelve or fifteen minutes.

Experiments on frogs demonstrate that the anaesthesia is due to action on the nerve endings, without any concomitant ischaemia. The drug in dilute solution is an energetic bactericide, and therefore needs no boiling. Subcutaneous injection on animals produces excitation of the brain centres, and reflex phenomena, trismus, etc., similar to those of strychnine. The weakest solution which produces anaesthesia in the rabbit is two per cent., as compared with one of five per cent. eucaine, two per cent. cocaine. The toxic dose for rabbits is one centigramme, against five centigrammes of cocaine and 7.5 of eucaine.

A report of the favourable action of the drug in eye surgery occupies several pages. In ear work a one per cent. solution is found the most useful, and several instances of successful induction of anaesthesia for small operations are reported. Among these are two in which cocaine had on several previous occasions caused vomiting and distressing disturbance of respiration. The use of holocaine caused no trouble whatever.

Comparative trials of holocaine and cocaine in the nose would seem to indicate a sure, rapid, and complete action for the former drug, though no shrinkage by ischaemia is produced. At the same time no toxic after-effects are to be noted. The same applies to laryngeal surgery, and patients complaining of pricking, etc., with cocaine applications tolerate holocaine well. In tubercular larynx the analgesic effect is said to be of longer duration with the latter drug.

In conclusion, the author maintains that in holocaine he has an ideal local anaesthetic, and one which surpasses cocaine in the following respects:—

1. Holocaine is cheap—about a quarter the price of cocaine; moreover, one per cent. solution is equivalent to ten or twenty per cent. cocaine solution.
2. It causes no pricking.
3. It is much less bitter to the taste than cocaine.
4. It produces no nausea, no sensation of tightness or of foreign body in the throat. It produces none of that cerebral excitation which is often responsible for cocaine mania.
5. It causes no vascular contraction.
6. It never causes symptoms of general intoxication.
7. The solutions are stable and antiseptic.

Eucaine compares unfavourably with holocaine in its high price, in the concentration of its solution necessary to obtain anaesthesia, and in producing a sensation of smart pricking.

Ernest Waggett.

Farlow, John W.—*A Case of Subglottic Fibroma removed by Tracheotomy and Curetting.* "New York Med. Journ.," Dec. 11, 1897.

A SUCCESSFUL case is reported by the author.

Geyer, Dr. V. (Frankfort). — *Laryngeal Hæmorrhage*. "Munchener Med. Woch.," April 12, 1898.

THE author refers to the different causes of laryngeal hæmorrhages, injuries, ulcers, anomalies of the blood, vicarious menstruation, overstraining of the voice in singers, catarrh, laryngitis sicca. The hæmorrhage may be external, and vary from a few drops to a fatal quantity, or it may be submucous. He then describes two cases with hæmorrhagic tumours from the clinic of Prof. Moritz Schmidt:—

1. A woman forty years old, with good family history, had enjoyed good health. Two years ago she had hæmorrhage from the uterus, which was cured after curetting and removal of a placenta polypus. For seven weeks the patient had hawked clear fluid blood, varying up to a cupful in twenty-four hours. Slight cough. Great weakness. Hoarseness for two days. Menstruation normal. Dr. Lahn, in Hünfeld, discovered a tumour on the petiolus epiglottidis and sent her for treatment.

Examination showed, slightly under the petiolus, a sessile tumour the size of a currant, surface smooth and covered with fresh blood, colour bluish red. The tumour was firmly situated, and could be slightly moved with the probe. Diagnosis: bleeding polypus on the lower side of the epiglottis. It was attempted to produce shrinking of the tumour by applying trichloracetic acid. This caused severe dyspnoea for two hours, which nearly necessitated tracheotomy. After twenty-four hours the dyspnoea passed off.

As it was not considered advisable to repeat the treatment, and as removal through the mouth might lead to severe hæmorrhage, it was decided to operate with an external incision. After a previous tracheotomy on April 29th, Dr. Ebenau performed subhyoid pharyngotomy and removed the tumour with a sharp spoon. The base was cauterized with trichloracetic acid. The hæmorrhage ceased after removal of the tumour, but returned after a few days. The laryngoscope showed a new tumour the size of a pea. Then it was no longer doubtful that it consisted, not of a tumour, but of a blood coagulum, which was confirmed by the microscope (Weigert). Large hæmorrhage, with necrosis of the superficial layer and infiltration of leucocytes. After removal of the blood coagulum now under the petiolus, a bleeding vein was seen, which was closed by repeated cauterization. Nine months after the operation there has been no more hæmorrhage.

2. Woman, forty-eight years old, suffered from intermittent severe hoarseness, tickling in the throat, and shortness of breath on exertion. The laryngoscope showed the presence of a tumour anteriorly in the glottis, the size of a hazel nut; colour, pale red; surface uneven; of pretty hard consistence. The tumour had a broad basis, and was situated on the anterior end of the left vocal cord. It had the appearance of a fibroma. It was removed with the snare. The microscope (Weigert) showed it to be not much altered laryngeal tissue, with an old hæmorrhage under the mucous membrane. It was mostly organized with enlarged thin-walled vessels, containing partly hyaline amorphous and partly thready exudation. There was abundant pigment in the endothelial cells. Six months after the operation there were very small stippling-like red points, which looked like granulations, at the situation of the tumour. Vocal cords were white; voice clear. Blood has not been coughed up since the operation.

The author refers to a similar case published by Semon in Vol. IV., p. 418, of Fraenkel's "Archives," which was at first supposed to be malignant. He points out the importance of the differential diagnosis between these and cancer, and emphasizes the importance of free movement of the cord in the former. *Guild.*

Hermary.—*Treatment of Simple Laryngitis with Erysimum*. "Presse Med.," Nov. 20, 1897.

It would seem that *erysimum*, *sisimbrium vclar*, *tortelle*, or "*herbe au chantre*," is

a medicinal plant, which in the last century was much in vogue as a curative drug for hoarseness among professional singers, and which has now been forgotten. The syrup or infusion of the leaves has, in the hands of the author, proved to be of great value, not only in restoring the quality of the voice, but in reducing the evidences of inflammation in cases of simple acute laryngitis. In twenty such cases three doses daily, consisting of sixty grammes of the syrup in an infusion representing thirty grammes of the leaf, has removed all the functional disturbance in forty-eight hours. The drug appears to have no toxic qualities, and has been taken for fifteen days with no more general reaction than a slight diuresis.

Ernest Waggett.

Laryngeal Intubation and the Act of Vomiting. Leading Article, "New York Med. Journ.," Jan. 1, 1898.

THE important observation first made in 1895 by Dr. Greene, of St. Paul's, to the effect that inability to hold the breath precludes the possibility of "effective" vomiting, is studied with reference to intubation as being thereby a means of stopping or alleviating to some extent those distressing and often alarming cases of vomiting that have resisted all milder measures. Experimental observations on dogs under the influence of apomorphia have confirmed Dr. Greene's theory. In this connection also the suitability of a tracheotomy tube can be gauged by its power of preventing "effective" vomiting.

Lowenstein.—*Epithelioma of Left Vocal Cord.* Society of West German Laryngologists and Otologists, 1897.

THE author showed a patient who had been operated on in May, 1894, for carcinoma of the left vocal cord; operation consisted in laryngo-fissure and one-sided resection. The patient, fifty-six years old, dated his affection from September, 1893, when he consulted the author on account of difficulty in speaking. A broad elevation without inflammation was noticed at the junction of anterior and middle parts of the vocal cord; the left cord moves with greater difficulty than normal; there was no pain in the left ear. The author intended to operate *per vias naturales*, but patient would not consent. He returned in April, 1894. The left cord in its whole length was thickened, reddened, and rough on the surface. Operation was undertaken; a tampon canula was introduced and trachea plugged with iodoform gauze, which was removed three days after the operation. Patient left the hospital fourteen days after the operation and has remained well. Microscopically Prof. Rindfleisch, Wurzburg, said it was flat-celled epithelioma. Patient is again in employment, and has a hoarse but loud voice. *Guild.*

Marage.—*Study of the Vowels by Photography of Manometric Flames.* "Presse Méd.," Nov. 17, 1897.

THE chief results of the experiments, which were carried out at Marey's laboratory, are as follows:—

1. Each spoken vowel is always characterized by the same group of flames. I, O, U are represented by one flame. É, EU, O by two, and A by three flames. (Presumably the French pronunciation is in question.)

These results accord exactly with those of Grassmann, Helmholtz, and Hermann, though arrived at by a different method.

2. Each flame corresponds to a double vibration; and the sound is constant for each vowel and each experiment if the method of pronunciation varies but little. Each vowel is then characterized more by its tracing than by its sound, which varies within certain limits.

3. By combining the vowel A with I, O, OU, one can obtain tracings characteristic of the two-flame vowels. Thus A + I = E; A + U = EU; A + OU = O.

Two superposed vowels may then produce a third; hence the confusion noticed in choir singing.

4. With sung vowels the characteristic tracing (and, therefore, sound) disappears; and there is no difference between the vibrations of a tuning-fork and those of the singing voice.

This explains the difficulty of hearing sung vowels and of understanding the words of a song. In singing the note is preserved and the "vocal" slurred. In speaking the note is neglected and the "vocal" attended to.

Ernest Waggett.

Mayer, Emil.—*Primary Lupus of the Larynx*. "New York Med. Journ.," Jan. 1, 1898.

THE author reports two cases which showed extreme difficulty in diagnosis. He enumerates the main symptoms and modes of treatment of this very rare complaint, and tabulates the chief distinguishing features between it and tuberculosis, for which it is very likely to be mistaken.

Mermod.—*An Endolaryngeal Mirror (Le Laryngendoscope)*. "Ann. des Mal. de l'Oreille," Feb., 1898.

IN view of the difficulty of examining certain parts of the larynx, notably the posterior wall and ventricles, by the ordinary methods, the author has been making use of a small endolaryngeal mirror, which he has found easy of manipulation, and altogether a very serviceable instrument.

The small mirror, made in five sizes (Walter Biondetti, of Bâle), is of a lanceolated, oval shape, and soldered to a very fine flexible stalk an inch and a half in length. This stalk may be bent so as to give any desired angle to the mirror, and is screwed into the end of a stronger shaft with the usual laryngeal curve. By this means the mirror can be rotated into any position, as well as tilted according to the requirements of the case. The author has not satisfied himself with a device for altering the position of the mirror when *in situ*. When the larynx has been well cocaineized the mirror can be employed with the same ease as an ordinary probe, and with a strong reflected light gives valuable information, which would otherwise not be forthcoming. He reports a case in point, where, after repeated negative examination by the classical methods, a small ulcer was found low down in the interarytenoid region.

A similar triangular mirror was devised by Rosenberg in 1887, but owing to its elaborate construction seems to have failed to come into general use.

Ernest Waggett.

Murray, Marris.—*A Contribution to the Study of the Treatment of Laryngeal Phthisis*. "New York Med. Journ.," Jan. 1, 1898.

THE author reviews the various remedies employed. In addition to topical measures, he speaks highly of the internal use of creosote, in minim doses, increased by one minim daily, but discontinued on the first appearance of gastric disturbance. Curetting, followed by application of lactic acid, is the best local treatment. Tracheotomy is of undoubted value in some cases. The author advocates the local use of enzymol as a valuable adjunct to the curette and lactic acid.

Peyrissac.—*Foreign Body in the Air Passage, Prune Stone in the Left Bronchus. Expulsion without Tracheotomy after Intratracheal Injection of Cold Water*.

A MAN of eighteen aspirated a prune stone into his left bronchus during sleep, which, during the next twelve days, caused difficulty in breathing and pain. Before undertaking tracheotomy Peyrissac injected three cubic centimetres cold water to

try the effects of reflex coughing. After a few seconds the stone, imbedded in muco-purulent secretion, was expelled. No sequelæ. *Guild.*

Stillson, Howard.—*Spasmodic Closure of the Glottis in the Adult.* "Journ. Am. Med. Assoc.," Feb. 26, 1898.

SPASMATIC occlusion of the larynx is usually of reflex origin from some nerve lesion more remote. There is either paralysis of the abductor muscles (lateral crico-arytenoids) or spasm of the adductors (interarytenoids).

Spasm of the adductor muscles is usually found in chorea and hysteria, and is usually brief in duration and not severe. It is in the nature of a nervous cough, and should be treated as such.

Of closure of the glottis due to paralysis of the abductors there are two forms—one seen in such diseases as epilepsy and the other in ataxia, etc. In the so-called laryngeal epilepsy or laryngeal vertigo there seems to be no paralysis, except during the attacks. The attacks are sudden and transient, the patient being seized with a sudden violent coughing that amounts to strangling. In a few seconds he will fall—usually upon his back—and entirely lose consciousness. This attack will last only a few seconds, when the patient will rise, feeling perfectly well—no pain or discomfort remaining. About thirty cases of this kind have been reported.

Paralysis of the abductors is more common in such affections as ataxia; and the attacks differ in being less sudden, last longer, and, though the patient falls, he does not lose consciousness. Paresis or paralysis is present between the attacks. The author reports a case of this kind occurring in ataxia, in which the patient lost consciousness on the first attack, but not in later ones. It is one of the early symptoms of ataxia, and frequently occurs before any other marked symptom; so it should receive particular attention.

ŒSOPHAGUS.

Ebstein, L. (Vienna).—*On Œsophagoscopy, and its Therapeutical Employment.* "Münchener Med. Woch.," Feb. 22, 1898.

THE author complains of the small appreciation that the œsophagoscope finds in literature, and then describes the instrument which Prof. Stoerk constructed, and used in his clinic for years. He refers to the technique of introduction of the œsophagoscope, which consists of semicircular movable joints, and can be put in its place as a straight, stiff tube. He recommends plentiful application of a ten to twenty per cent. solution of cocaine, and rejects other methods of anaesthesia. The instrument is introduced while the patient sits on a low stool, which is more advantageous than a horizontal position. A bougie is passed before the œsophagoscope. Stoerk's method has this advantage, that backward bending of the vertebral column is not necessary in its introduction, as it is with hard tubes. The œsophagoscope is of great use in the removal of foreign bodies, whether they are impacted or not. Especially in pathologically changed œsophagi, e.g., stricture, carcinoma, the œsophagoscope is of great use in the removal of foreign bodies, as the actual situation can be very well seen. He described a case of stricture of the œsophagus where it was necessary to remove a piece of meat. A solution of papain was used with advantage to soften the mass. Contrary to other authorities, he emphasizes the possibility of treating existing strictures by bougies in the œsophagoscope; that, further, the instrument is of special use in cases where, in spite of existing stricture, it is necessary to introduce nourishment into the stomach.

Also by means of the œsophagoscope the anatomical-pathological conditions of stricture are easier recognized than by means of bougies. Stricture can be dilated by laminaria tents which are introduced through the œsophagoscope. *Guild.*

Einhorn, Max.—*The Inspection of the Œsophagus and Cardia.* "New York Med. Journ.," Dec. 11, 1897.

THE author briefly reviews the various attempts made in this direction. He considers the stiff œsophagoscope as generally more serviceable than the flexible instrument. He believes that it is only in exceptional cases that chloroform narcosis is necessary for the examination, and he gives a high place to the method from the point of view of diagnosis and therapeutics.

THYROID, &C.

Jonnesco.—*Surgical Treatment of Exophthalmic Goitre.* "Presse Méd.," Oct. 23, 1897.

THIS paper is a critical essay on the various surgical procedures hitherto employed, and contains a detailed description (and plate) of the operation for removing the entire cervical sympathetic. The conclusions arrived at are:—

1. In true exophthalmic goitre, surgical interference with the gland is both dangerous and ineffectual.

2. Simple section of the cervical sympathetic is useless, though partial resection, including the two first ganglia, may give lasting results.

3. The operation *de choix* is total and bilateral resection of the cervical sympathetic. *Ernest Waggett.*

E A R.

Alt, F. (Vienna).—*On the Pathology of the Cortical Auditory Centre.*

THE posterior part of the left temporo-sphenoidal convolution is usually described as the auditory centre. Clinical observations point to a connection between the cortical centre on the one side and the auditory organ on the other, *i.e.*, observations on crossed cortical dumbness. Diagnosis of disease in the right temporo-sphenoidal convolution is nearly impossible; localization in the left temporo-sphenoidal lobe is assisted by sensory aphasia as a sign of a lesion in the sensory speech centre, with paraphasia, agraphia, alexia, and central dumbness. Tone deafness frequently occurs in this disease. The author describes a case where a patient, thirty-three years of age, during the night was affected with paralysis of the right side as well as speech. The latter improved, but left sensory aphasia. Softening in consequence of endarteritis syphilitica was diagnosed, which had led to destruction of the fibres of the corona radiata of the left temporal lobe.

Guild.

Biehl, C. (Wien).—*Closure of Perforations in the Tympanic Membrane.* "Centralblatt für innere Medicin," 1891, No. 11. "Wiener Klin. Woch.," 1898, No. 12.

OKUNEFF, in Petersburg, introduced the closure of perforations, which were covered with epithelium, by means of trichloroacetic acid and the formation of granulations. Biehl reports twelve cases, where ten to fifty per cent. of trichloro-

acetic acid was applied to the perforations. The application was made without cocaine every four to eight days. In seven cases closure was effected of smaller and larger perforations. In the latter, if situated amongst cicatricial tissue, or if the edges have chalk deposit, not much is to be expected from this treatment. Treatment causes no pain. In one case suppuration occurred; in another, hæmorrhage of the tympanic mucous membrane.

Guild.

Carette.—*Contribution to the Study of Foreign Bodies in the Meatus.* "Annal. des Malad. de l'Oreille," Feb., 1898.

THE report of a case in which, owing to the accidental discharge of a revolver, the bullet entered and was impacted in the external auditory meatus. So firmly was the projectile wedged in the bony canal that after reflection of the auricle and section of the membranous meatus, its extraction *en masse* was impossible, and it became necessary to remove the lead piecemeal with the gouge and burr. The membrana tympani was uninjured.

Ernest Waggett.

Hopmann (Cologne).—Society of West German Laryngologists and Otologists. "Vereinigung Westdeutscher Hals und Ohrenärzte," Nov., 1897.

THE author showed a girl three years old with objectively perceptible noise in the left ear, which has been noticed since an attack of whooping cough seven months before. The noise is heard by day at a distance of ten centimètres, also by night. The noise is synchronous with the heart systole, but is not heard by the other ear or over the heart or large vessels. Compression of the carotid does not affect the noise. Apart from cases of noises in the ear caused by aneurysm there is a second kind of objectively perceptible sounds, which are due to clonic spasm of the tensor veli palati (Politzer), or of the *dælator tubi* muscles, and which the will can prevent. These noises cease in sleep; the first not. Most cases of objectively perceptible noises have been preceded by an injury, fall, or blow. Therapeutically the only thing which has an effect is tampons in the meatus. Lenzmann thought the noise was arterial, as it was synchronous with the pulse. Lowenstein considered it an open question whether it was not due to conduction from the cervical veins. Ropke saw a case due to aneurysm of the internal carotid which disappeared on pressure on the artery.

Guild.

Keller.—*On Testing with the Tuning-Fork.* Prompted by Masini, "Bollettino delle Malattie dell' Orecchio," 1881.

THE author has made many investigations in testing with the tuning-fork over the lower jaw, and has obtained the following results. (1) If one places a sounding tuning-fork anywhere on the lower jaw except the middle, the tone appears exclusively in the ear of the opposite side; on closing the ear on the same side the tone springs across to this side; by closure of both sides the perception is again crossed. (2) By closing the opposite ear the tone is longer heard than in the closed ear on the same side. (3) The strength and duration of bone conduction for a tuning-fork is greater on the lower jaw than anywhere else. From this one can, *à priori*, understand that certain connections of Weber and Rinné tests can be explained, but which partly seem to be contradictory, which only longer and varied trials can render plain. In any case application of a tuning-fork to the lower jaw is of importance in Rinné test.

Guild.

Lederman.—*Mastoideocentesis.* "The Laryngoscope," Jan., 1898.

IN a short editorial note upon this subject Lederman remarks that Leiter's coil is a valuable agent in allaying inflammatory symptoms about the mastoid process, but that its use should not be prolonged for more than forty-eight hours, provided no relief is given, or if the symptoms increase in intensity. After this period, if

the parts are still tender to pressure, and swelling of the upper and posterior meatal wall near the attachment of the membrane is observed, accompanied by bulging of the membrana tympani, no further time should be lost in palliative measures.

Temperature is not a reliable index, for, although it may rise if inflammation increases in acute cases, in chronic cases the disease may be actively spreading without any such indication.

In opening the mastoid process we should not rest satisfied with merely opening the antrum, but should carry our investigations towards the mastoid apex, as frequently the cells there are affected, and if not cleared out the disease may extend into the deeper structures of the neck and cause fatal complications.

W. Milligan.

Lester, J. C., and Gomez, V. (New York).—*Observations made in the Caisson of the New East River Bridge as to the Effects of Compressed Air upon the Human Ear.* "Arch. of Otol.," Feb., 1898.

THIS is a record of observations made on trustworthy intelligent individuals exposed to the effects of compressed air in the caisson used for the construction of a bridge. The hearing was tested both before and after the entrance into the caisson, by means of the watch, the whisper, the acoumeter, Galton's whistle, the lower tone limit, Weber's test, Rinne's test, and the test of absolute duration of bone conduction known as Schwabach's. The observations are fully detailed, and from these the authors have deduced the following conclusions:—That for aërial and bone conduction, the reaction of the tuning-forks is markedly diminished, this being especially true of the higher notes. That bone conduction is affected to a greater degree than aërial conduction. That this is probably due to hyperæsthesia of the labyrinth or some analogous disturbance, the effects of which are more pronounced on the lower portion of the cochlea. That the hearing power, both for aërial and bone conduction, is reduced directly in proportion to the atmospheric pressure. That the lower tone limit is unaffected, being 16 D. V. in all the cases before and after entering the caisson. That the hearing distance for both whisper and speech is markedly decreased in the caisson. That certain vowel and consonant sounds are heard with difficulty, or not at all. For example: in one case the letters P and G were not heard at all; in another, C and G were not heard; another case failed to hear G and L, and still another failed to hear A and B.

That the hearing distance for the watch decreased in all cases in the ratio of nearly one to twenty. That the effects of the aforesaid labyrinthine disturbances persist for varying intervals—from twenty-four to forty-eight hours—in persons not accustomed to the action of compressed air. That a pressure of one-half an atmosphere is sufficient to cause depression of the drum membrane. That a pressure of two atmospheres causes marked disturbance of the drum membrane, accompanied with congestion of the malleal plexus and of the membrana flaccida. That in some cases this depression is sufficient to cause displacement of the ossicular chain and persistent tinnitus. That, in descending into the caisson—while in the "lock"—there is great danger of the drum membrane being ruptured, if care is not taken to perform Valsalva's experiment. That persons suffering from coryza, a slight cold, or congestion of the naso-pharyngeal mucous membrane from any cause, must not attempt to enter the caisson. That this has been found to be equally true of persons who have been accustomed to entering and re-entering the caisson for years. That persons affected with chronic ear disease, especially the sclerosing types, must likewise avoid entering the caisson. That those affected with labyrinthine disease, especially if the semicircular canals are involved, should be cautioned not to enter the caisson, owing to the great danger of vertiginous symptoms occurring while in the "lock."

Dundas Grant.

Marage.—*On the Utility of Physiological Massage of the Ear in Certain Forms of Deafness.* "Archiv. Internat. de Laryngol., Rhinol., and Otol.," Jan. and Feb., 1898.

THE usual methods of applying massage to the ear are in a sense unscientific, as they in no way reproduce the kind of vibration which the organ is naturally adapted to receive, and the unsuitable nature of these methods often shows itself in congestion of the tympanum and tinnitus. As massage is no doubt useful in many cases the author has devised a masseur based on physiological principles, inasmuch as it retains as a constant one of the qualities of sound, the timbre, while permitting of variation in the intensity and pitch. The instrument consists of a small cylindrical box of ebonite, containing a membrane vibrating under the influence of speech. It is so arranged as to give out no harmonic, so that the timbre does not alter. The intensity is varied by the employment of conducting tubes made of rubber of various degrees of elasticity. With a rigid conducting tube the sound reaches the ear without loss, while with a soft-walled tube much of the intensity of the vibrations is absorbed *en route*. The pitch of the vibrations is varied by the pronunciation of the different vowel sounds, each of which (as detailed in the authors paper mentioned in the last number of this journal, and which appears in full in "Archiv. Internat. de Laryngol., Rhinol., and Otol.," January and February, 1898) has its characteristic note.

The author has made use of this masseur for sixteen months. In deafness from sclerosis, where hearing for the watch remains, the disease seems to have been checked, and in many instances a notable and lasting improvement has occurred. In cases of profound deafness the instrument has proved very serviceable as an ear trumpet. The method has rendered service in cases of deafness from sequelæ of purulent otitis.

Ernest Waggett.

Ménière, E.—*The Use of Gum-elastic Bougies in Chronic Catarrhal Affections of the Eustachian Tube and Tympanum.* "Arch. Intern. de L., O., R.," Jan., Feb., 1898.

THE author is of opinion that the air douche, even when medicated vapours are added, can seldom be of much service where the Eustachian tube is narrowed by hypertrophic changes in the mucosa, and he has lately been reviving in his practice the old method with the bougie, and is much pleased with the results.

He considers the celluloid bougie highly dangerous on account of the possibility of its breaking in the Eustachian tube, and recommends as the only perfect instrument, a gum-elastic bougie, varying from half to two millimètres in diameter, slightly conical at the extremity, and without an olivary enlargement. Bénas has provided him with an excellent instrument. The bougie should be steeped in an iodine solution (iodine 1, potass. iodide 1, water 13, or twice this strength), a drug which has almost a specific effect in catarrhal affections, and after introduction should be left *in situ* for from half to sixty minutes. The author has met with no complications when the instrument has been introduced with care, and in many instances, where repeated catheterization has failed, he has obtained very satisfactory results. In any case the method enables the aurist to be certain as to whether treatment by the tube is or is not likely to be of service.

Ernest Waggett.

Muller, Richard.—*The Indications for Operative Treatment of Middle Ear Suppuration.* "Deutsche Med. Woch.," Mar. 31, 1898.

THE author divides the operations into opening the mastoid antrum and cells, and the radical operations.

The mastoid antrum should be opened in every case of acute suppuration (although there are no urgent symptoms) that does not yield to treatment in fourteen

days. Other indications are retention of pus in the mastoid process, continued fever without other cause, subperiosteal abscess (which is usually retro-auricular), occurrence of cerebral complications. He also points out how rapidly the mastoid process may be affected by cario-necrosis.

The radical operation consisting in making a common cavity out of the tympanic cavity, recessus epitympanicus and hypotympanicus, the aditus antri, the antrum mastoideum, and normal or pathologically communicating cells, is recommended in all cases of chronic suppuration which are not improved under treatment for two months.

Indications for the radical operation are subjective symptoms, as headache, tinnitus and vertigo, slight fever, also caries of the temporal bone or tympanic ossicles as it is difficult to diagnose caries limited to these, cholesteatoma and cerebral complications.

He also recommends trephining the mastoid in neuralgia of that process.

Guild.

Pringle, G. L. K.—*Trephining of the Mastoid for Mastoid Disease. No Relief. Subsequent Treatment with Antistreptococcic Serum.* "Brit. Med. Journ.," Jan. 15, 1898.

THE patient, a male aged twenty-two, came under the author's notice complaining of great pain in the occiput, with retraction of the head, and with a temperature of 103.8° F. The patient was admitted to hospital, and upon the following day the morning temperature was 100° F., and the evening temperature 103.2° F. The pulse was 86, and not markedly irregular. No history of discharge from the ear could be obtained. During the next ten days his temperature varied from 101° F. to 103° F. Shortly after this he had a copious discharge of pus from his right ear. The mastoid antrum was accordingly trephined, but no marked collection of pus was found. Two days afterwards the temperature was 98° F., and slight facial paralysis was noticed. The head remained still very much retracted, and the patient was very restless and noisy in bed. The variations in the temperature indicated so clearly the presence of pus that it was determined to try antistreptococcic serum. Ten c. cm. of serum were injected, followed the next day by 5 c. cm., and three days afterwards by 5 c. cm. again. During the following week the temperature remained fairly normal, but the wound was extremely foul. Slow recovery took place, and the optic neuritis which had been present gradually cleared up. The author remarks that the interesting points of the case are (1) the optic neuritis and its subsequent total disappearance; (2) the treatment by the antistreptococcic serum.

W. Milligan.

Rimini, E. (Trieste).—*On the Indications for trephining the Mastoid.*

THE author first described the causes of abscess in the mastoid. Periostitis of the mastoid process from otitis externa, with oedema of the skin over the mastoid and displacement of the auricle, when accompanied by headache and fever, simulates mastoid abscess. The diagnosis of abscess is difficult in those cases where, in spite of abscess formation, the skin is unchanged. When the discharge lasts four to five weeks in otitis media acuta without any dyscrasia, an abscess must be suspected. Cholesteatoma usually demand trephining. It is difficult to decide when to operate in double otorrhœa with sudden pyæmic or cerebral symptoms developed. An indication for trephining is often given in unilateral ear disease, where headache persists in spite of other treatment.

Guild.

Sizenes.—*Application of Acid Trichloracetic in Perforations of the Membrana Tympani.* "Wien. Klin. Rundsch.," No. 50, 1897.

(a) THE acid trichloracetic advances the regenerative faculty of the tissue of the membrana tympani; (b) cicatrization without any synechy between membrana

tympani and tympanic cavity; (c) in most cases considerable improvement of the hearing. R. Sachs.

Sizenes.—*Diagnostic Worth of the Percussion and Auscultation of the Processus Mastoideus.* "Wien. Klin. Rundsch.," No. 50, 1897.

AFTER numerous examinations the author concludes that the positive results are of importance for the diagnosis, but the negative results do not let us exclude the bone being intact. R. Sachs.

Somers, Lewis E.—*Fracture of the Cartilages of the External Ear.* "New York Med. Journ.," Jan. 22, 1898.

THE case recorded presented two interesting features—fracture without perceptible injury to the other tissues, and complete healing in a short period without any complications whatever.

Stacke, Ludwig.—*The Operative Opening of the Middle-Ear Spaces after Separation of the Auricle as a Radical Operation for the Cure of Old-standing Middle-Ear Suppuration, Caries, Necrosis, and Cholesteatoma of the Temporal Bone.* "Deutsche Med. Woch.," Apr. 7, 1898.

THIS work is founded on observations of one hundred operated cases. The author only recommends operative treatment in old-standing and protracted cases, when other means have failed. He describes the pathological anatomical conditions met with in the operation, and lays stress on the processes of cholesteatoma, which grow into the Haversian canals and often prevent a favourable result. Ninety-four cases out of the hundred were cured. There were no deaths. Relapses occurred in twenty cases, twelve of which were cured by antiseptic treatment. In four cases there was recurrence of cholesteatoma or caries. In four cases recurrence was due to bad nutrition. Hearing remained in forty-nine cases the same; it was improved in thirty-one, and made worse in six cases. The result in the others was not known. Guild.

Weiss.—*Paralysis of the Nervus Facialis through Trauma.* "Petersburg Med. Woch.," No. 39, 1897.

DEMONSTRATION of a patient with paralysis of the *nervus facialis* after perforation of the membrana tympani with a knitting needle. R. Sachs.

Woods, R. H.—*A Case of Chronic Suppurative Middle-Ear Disease, with Intracranial Complications.* "Brit. Med. Journ.," Jan. 22, 1898.

IN this case the patient, a male aged twenty-eight, had had an intermittent discharge from his left middle ear for seven years. The discharge ceased somewhat suddenly, and he was attacked by severe occipital pain. Other symptoms from which he suffered made the diagnosis between typhoid fever and intracranial suppuration somewhat doubtful at first. When seen by the author cerebation was slow, and he was found to be quite unable to name familiar objects, although he could at once tell their function. He complained of a bad taste in the mouth, and of severe frontal and occipital headache. Double optic neuritis was also present. The temperature was extremely variable, varying as much as 8.5° Fahr. in a day. It was decided to open the antrum and to explore subsequently the sigmoid sinus. This was accordingly done, and a clot scraped out by means of a sharp spoon. An abscess was also found upon the cerebellar aspect of the petrous bone, and was evacuated. For a time the symptoms improved, although the amnesia remained much as before. A second operation was accordingly undertaken and the cerebellum was explored, but without result. The temporo-sphenoidal lobe was then explored, and an abscess containing over four drachms of very fetid pus was found. A gradual and uninterrupted recovery took place. W. Milligan.

REVIEWS.

Handbuch der Laryngologie und Rhinologie. Lief. 13, 14, 15. (Wien : Hölder. 1897.)

IN the above numbers the high standard of excellence which has characterized the previous parts of this manual is maintained. Dr. Krieg writes on inflammation of the mucous membrane of the larynx and trachea, and Dr. Seifert on the different forms of ulceration which occur in these parts. Dr. Krieg's article, in addition to a full account of acute and chronic catarrh of the larynx, gives an excellent description of the varieties of pachydermia laryngis. He describes that rare form of pachydermia which used to be regarded as prolapse of the ventricle of Morgagni, but which has been shown by Fraenkel to be really an inflammatory hypertrophy of the mucous membrane arising within the ventricle and projecting into the laryngeal cavity. Hence the treatment of this condition lies in the removal of the hypertrophic tissue, and not in trying to push it back into the ventricle.

Both Dr. Krieg and Dr. Seifert hold that true ulceration may occur both in acute and chronic catarrh of the larynx. Dr. Seifert describes two forms of the so-called catarrhal ulcer : (1) the erosive ulcer, found on those parts which are covered with squamous epithelium—namely, the true cords and the posterior wall of the larynx ; and (2) the follicular ulcer, due to suppuration in a mucous gland, found in the epiglottis and ary-epiglottic folds. We confess to a prejudice in favour of the teaching of Prof. Schroetter, and think that anything beyond a superficial erosion of the epithelium on the edges of the cords, as in the interarytenoid space, indicates something more than a simple laryngeal catarrh.

In describing the acute laryngitis of children (pseudo-croup) Dr. Krieg takes the view that the attacks of dyspnoea are due entirely to rapid swelling of the mucous membrane in the hypoglottic region, and not to spasm of the glottis. To get over the difficulty that in many cases competent observers have failed to find any hypoglottic swelling in these cases, he suggests that the mucous membrane in this situation may be liable to rapid engorgement and sudden collapse, just like that covering the turbinated bones.

Dr. Hajek writes one paper on laryngitis submucosa acuta, and another on oedema of the larynx (inflammatory and non-inflammatory), and we observe that a third article by Dr. Gerber is to treat of infectious phlegmon of the larynx. We cannot help thinking that such an arrangement must lead to confusion and needless repetition. As pointed out by Semon and Kuttner, probably all cases of acute oedematous and phlegmonous inflammation of the larynx are pathologically identical, in the sense that they are all due to the invasion of the tissues by pathogenetic organisms. The intensity of the resulting inflammation probably depends on the quantity and virulence of the invading organisms, the depth to which they penetrate, and the resisting powers of the

tissues themselves. A recognition of this fact would greatly simplify the classification of these severe inflammations of the larynx, which could be grouped under the heading of "laryngitis-phlegmonosa," while the cases of simple œdema could be discussed apart, or under "disturbances of rculation."

Dr. Hajek's two articles above referred to, and a third on perichondritis aryngæa, are marked by that firm grasp of his subject and that power of lucid exposition which all his writings exhibit. It is interesting to note that he takes his cases to illustrate the different forms of perichondritis from Prof. Turck's great book, and recommends all who would understand this chapter of laryngology to study that work. We wonder how many of our younger laryngologists are familiar with the "Bible of Laryngology," as it is called in Vienna.

Dr. Rosenberg contributes a very exhaustive article on stenoses of the larynx and trachea. Every possible form of obstruction arising through pressure from without or caused by adhesion or cicatrix within the larynx and trachea is fully described, and the various methods of treatment minutely detailed. We notice, however, one serious omission in regard to the treatment of laryngeal webs, as no mention is made of the cutting dilator, such as that of Whistler, which is a most valuable instrument in the treatment of those cases.

Two short articles, treating of injuries to the pharynx and nasopharynx, and of foreign bodies in those regions, are from the accomplished pen of Prof. Jurasz.

Middlemass Hunt.

The Johns Hopkins Hospital Reports. Vol. VI. (Baltimore : The Johns Hopkins Press. 1897). Pages 409. Seventy-nine illustrations.

THE present volume is a very substantial one in bulk, and, like the preceding volumes, contains equally substantial and important records of pathological work done by the contributors. Dr. Henry J. Berkley's studies on the lesions produced by the action of certain poisons on the cortical nerve cell (alcohol, serum, and ricin poisoning, and the action of the toxin of experimental rabies) are most minute investigations, and the illustrations are abundant and excellent. The lesions and bacteriology of a number of cases of summer diarrhœa in infants have been exhaustively examined by Dr. W. D. Booker. He states that no single micro-organism is found to be the specific exciter of the summer diarrhœa of infants, but the affection is generally to be attributed to the result of the activity of a number of varieties of bacteria, some of which belong to well-known species, and are of ordinary occurrence and wide distribution, the most important being the streptococcus and proteus vulgaris. In the superficial epithelium of the intestine Dr. Booker is inclined to recognize the chief protection of the mucosa against the invasion of bacteria. A direct relation, he states, between the bacteria and the lesions in the solid organs is seldom demonstrable, except in the lungs, where bacilli and cocci are often present in enormous numbers in the pneumonic areas. In the other organs the lesions resemble those resulting from the absorption of toxalbumen products of bacteria, such as the necrosis of tubular epithelium, hyaline tube casts and intracapsular inflammation in the

kidneys, hæmorrhage of the spleen, focal necrosis of lymph follicles, loss of cells, and in one case cirrhosis of the liver.

Perhaps of greatest pathological importance is the part on the pathology of toxalbumen intoxication, to which one hundred and fifty pages are devoted. This part, the work of Dr. Simon Flexner, is likewise beautifully illustrated, and his experiments and his account of the experiments of others throw much light on the histological changes, diffuse or focal, produced in man by the action of bacterial and other soluble toxic agents.

Brandt.—*Klinik der Krankheiten der Mundhöhle, Kiefer, und Nase.* Heft I. By Dr. L. BRANDT. (Berlin: August Hirschwald.)

THE first part of this work, which occupies fifty-two pages, treats of deformities, which are divided into congenital, acquired and those due to phosphorous necrosis.

In the first chapter devoted to congenital deformities, the author merely mentions those due to developmental abnormalities of the branchial clefts and imperfect formation of the lips and cheeks, which cannot be rectified by prosthesis. He then proceeds to give a historical description of the operations and obturators used in the treatment of cleft palate, and indicates the conditions necessary for satisfactory operative interference. To improve the result, he lays stress on careful after-treatment by massage, and instruction by a competent teacher to accustom the tongue to the new conditions. Obturators used by himself are described and illustrated.

In the second chapter he describes deformities of the jaws caused by injuries or operations, and gives an illustrated description of appliances to obviate deformity.

The third chapter is taken up with a description of deformities of the nose due to constitutional disease, *e.g.*, syphilis and lupus. He points out the difficulties which interfere with plastic operations, and describes the materials and methods for making artificial noses.

In the fourth chapter he discusses the etiology and pathology of phosphorous necrosis, and the precautions laid down for phosphorus workers and treatment.

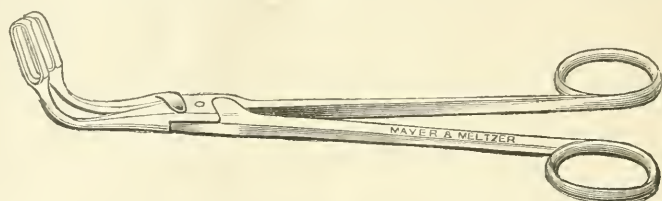
Guild.

NEW INSTRUMENTS.

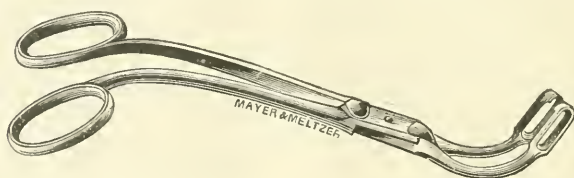
FORCEPS FOR NASO-PHARYNGEAL ADENOIDS.

Dr. STCLAIR THOMSON (London) writes: "Of the various modifications which have been effected in the shape of the post-nasal forceps originally made by Löwenberg, I think the one designed by Jurasz has not met with the attention it deserves. In this form the extent of the cutting surface and the size of the fenestræ allow of large portions of the growth being grasped, so that very few introductions of the instrument are required. I venture to think that, in common with most forceps used in the removal of these growths, those of Jurasz are unnecessarily large, long, and heavy. In the pair which Messrs. Mayer and Meltzer have made

for me the instrument only weighs one ounce, instead of three and a half ounces, and in a straight line it measures six inches, instead of ten and a half inches. The hinge is of a different construction, allowing the instrument to be easily taken to



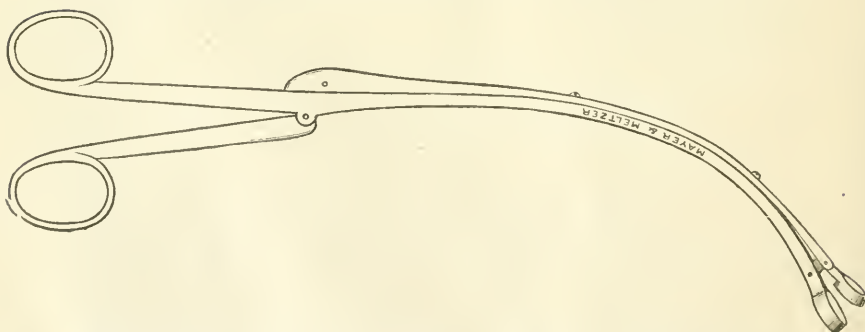
pieces to be purified, and at the same time it is so arranged as to diminish any risk of the uvula being caught in the joint. The slighter build leaves more room for the index finger to be manipulated along with the forceps in the post-nasal



space, while the shorter handles give more power. I have found this six-inch pair sufficiently large for patients up to sixteen years of age. The forceps have also been made with straight handles, as in Ruault's modification, for those who prefer this form."

NEW CUTTING LARYNGEAL FORCEPS FOR LARYNGEAL TUBERCULOSIS.

The forceps are designed as far as possible to enable the operator to remove portions of diseased tissue from the epiglottis and rima glottidis. They are very

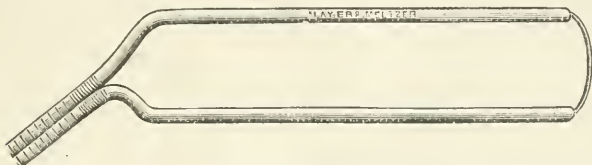


strong, and will cut easily through cartilage. I have found them very serviceable, and trust they may prove of use to others, most of the tube-cutting forceps being too weak. They are made by Messrs. Mayer & Co., 71, Great Portland Street, London.

R. Lake.

TURBINOTOMY CAUTERY POINT.

MR. ERNEST WAGGETT recently showed at the Laryngological Society of London a cautery point intended for the removal of moriform enlargement, and fringes of redundant mucous membrane from the turbinates. The instrument is similar in shape to Jones' turbinotome, and consists essentially of two parallel copper wires, united at their distal extremities by a thin platinum wire, which, when heated by the current, replaces the cutting edge of the former instrument. The object in view is the removal of tissue without hæmorrhage, and in the hands of the deviser the instrument has fulfilled that object satisfactorily. With regard to the removal of moriform hypertrophies, the cautery point has this distinct advantage over the cold snare, that it can be adjusted with certainty, although the tissue has fully shrunk



under the influence of cocaine. Over the hot snare it has the advantage of being a rigid instrument, easily adjusted, and free from the drawbacks attending the shortening of a loop in circuit. In operating, the transverse platinum wire, which has a slight curve, is passed while cold beyond the excrescence to be removed; the circuit is then closed and the heated wire drawn slowly towards the operator. A local anæsthetic is, of course, indispensable. As the current required to heat a platinum wire sufficiently thick to be serviceable is necessarily considerable, the copper wires should be fairly thick to prevent over heating.

The instrument has been made in various sizes by Messrs. Mayer & Meltzer.

BRITISH MEDICAL ASSOCIATION.

SIXTY-SIXTH ANNUAL MEETING, EDINBURGH.

July 26th, 27th, 28th, and 29th, 1898.

SECTION J.—LARYNGOLOGY AND OTOTOLOGY.

President—PETER MCBRIDE, M.D.

Vice-Presidents—J. J. KIRK DUNCANSON, M.D.

J. DUNDAS GRANT, M.D.

ROBERT MACKENZIE JOHNSON, M.D.

STCLAIR THOMSON, M.D.

THE meeting of the British Medical Association will be held this year in Edinburgh, from the 26th to the 29th July inclusive, at which the combined sections of Laryngology and Otology will be under the presidency of Dr. McBride, M.D., F.R.C.P.Ed.

The subject selected for discussion is "The Mutual Relationship and Relative Value of Experimental Research and Clinical Experience in

Laryngology, Rhinology, and Otology." The discussion will be introduced under these three heads by Sir Felix Semon (London), Dr. Greville MacDonald (London), and Dr. William Milligan (Manchester).

Titles of papers and communications should be sent to the honorary secretaries, A. LOGAN TURNER, 20, Coates Crescent, Edinburgh, and A. BROWN KELLY, 26, Blythswood Square, Glasgow, as soon as possible.

NOTE.

WE learn that the "ARCHIVES INTERNATIONALES DE LARYNGOLOGIE, OTOLOGIE, ET RHINOLOGIE" have lost their Director, M. HELME, and that the cloak has fallen upon M. ST. HILAIRE. We wish him a success equal to his predecessor, and believe that the circulation of all special journals tends to increase. To those who know the "Archives" no commendation is necessary; to those, however, who are unacquainted with them, we can only say that they will find them well stocked, and that they amply repay perusal with interest.

THE JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY.

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TWO CASES OF LUDWIG'S ANGINA OR SUBLINGUAL PHLEGMON.

By W. E. CASSELBERRY, M.D. (Chicago),

Professor of Laryngology and Rhinology in North-Western University Medical
School ; Laryngologist and Rhinologist to St. Luke's Hospital ;
Laryngologist to Wesley Hospital, etc.

Abstract of a paper read before the Chicago Medical Society, March 23rd, 1898.

A FORM of inflammation of the floor of the mouth and neck was first described by Ludwig in 1836, under the name of gangrenous induration of the neck, and Camerer the following year gave it the name of Ludwig's angina. The exact anatomical site has been a subject of some doubt, but Newcomb in a recent review of the literature locates it in the "sublingual hollow" of Sebilleau, which lies one on each side of the genio-hyo-glossus muscles and contain the group of sublingual salivary glands and considerable cellular tissue. It does not contain the whole of the submaxillary gland, but the deep portion of the submaxillary approximates the sublingual gland, and it would seem that secondary infection of the submaxillary might readily ensue ; and, conversely, primary infection of the submaxillary gland, while it usually runs a course quite distinct from sublingual phlegmon, might invade the "hollow" and its contained sublingual glands, and constitute a veritable Ludwig's angina.

Case I. Mr. M., aged about thirty years, and of fine physique, was first seen in consultation November 14th, 1896. He was then suffering from an unusually intense pharyngitis with high fever and depression of about three days' duration, and with signs of commencing left peritonsillar abscess. The velum palati was quite œdematous, and the uvula swollen and elongated. The tonsils were small and without an exudate, but on the left side the swollen anterior pillar joining the œdematous uvula was

so suggestive of peritonsillar abscess that a puncture was advised, the pus was evacuated, and the pharyngeal feature of the case terminated. It is of interest in this connection as the evident source of the infection from which the sublingual phlegmon originated.

A week later, on November 21st, I again saw the patient on account of a swelling in the front of the mouth beneath the tongue, which had commenced two days before, and which thickened the floor of the mouth to a level with the edge of the teeth, and crowded the tongue upward and backward against the palate, and this toward the posterior pharyngeal wall. Respiration was slightly stertorous, and deglutition painful. The tongue itself was not inflamed, thus excluding glossitis. The swelling was bilateral, but a trifle more marked on the right side. There was not yet any tumefaction of the neck or submaxillary region. The sublingual induration could scarcely be described as "wooden-like," a diagnostic term which has been used in connection with other cases, but certainly it was dense and unyielding to the touch. There was no tendency to "pointing," no fluctuation, and no precise signs of any suppurating focus. Two exploratory scalpel punctures were made into the depths of the induration, but without result, other than free hæmorrhage, which it was hoped might be beneficial. The patient was anxious and depressed. A guarded prognosis was given, accompanied by a suggestion that tracheotomy might become necessary.

After a few days he was reported to be better, but ten days later I was hastily summoned, to find him asphyxiated and moribund, laboriously gasping rather than breathing. It was explained that he had become rapidly worse during the previous night, and had passed into unconsciousness about eight o'clock, an earlier call having failed to find me. The sublingual phlegmon appeared much worse, the mouth would not close, and there was now diffused tumefaction of the cutaneous surface beneath the jaw, but insufficient to indicate any certain approach to a possible abscess. More scalpel punctures failed to discover pus. Evidently œdema of the larynx had supervened, and an immediate tracheotomy was performed. Subsequently, while the patient was still unconscious, hypodermatic needle punctures were made in every direction through the infiltrated tissue in search of pus, but without success. The patient regained complete consciousness and breathed well through the tracheotomy tube for a time, but four hours later there were signs of œdema of the lungs, the shallow respirations mounted to sixty a minute, and death supervened. A regular autopsy was not held, but when I removed the tracheotomy tube I took the opportunity to make free incisions through the floor of the mouth sufficient to satisfy myself that there really was no circumscribed collection of pus present, only diffused phlegmonous inflammation.

Comments.—This case simply adds to repeated experiences that tracheotomy to be of avail in cases of impending suffocation must be done at once, else the continued suction upon the pulmonary blood vessels produced by muscular efforts at respiration when the glottis is closed will result in fatal œdema notwithstanding tardy relief.

Case II. Mrs. C., aged sixty years, previously in good health, was

suddenly affected in July, 1895, with an acute inflammation of the floor of the mouth and rapidly increasing inflammation of the tissues, which, while not affecting particularly the tongue itself, forced the lingual base upwards and backwards, filling the throat and causing the tip of the tongue to protrude between the teeth. Thus, the mouth could be neither opened nor shut, deglutition was impossible, and respiration dangerously impeded. There was submaxillary induration extending down the neck and pronounced cervical lymphadenitis, both on the right side. The condition assumed the gravest aspects, until at the end of a week, at which time I first saw her in consultation, fluctuation was evident in the vicinity of the right sublingual salivary gland, which required the merest puncture to evacuate pus. The urgent symptoms rapidly subsided, but a large indurated nodule in the floor of the mouth and enlargement of the upper cervical lymphatic glands remained for many weeks, while the patient recuperated but slowly from the extreme depression, exhaustion and emaciation.

Regarding the etiology of Ludwig's angina in the cases in which cultures are reported the *streptococcus pyogenes* and *streptococcus erysipelatis* are most often found, although *staphylococci pyogenes albus* and *aureus* have been found in isolated instances.

In several recorded cases, as in the first one herewith related, the primary infection occurred in the tonsil, so that sublingual phlegmon must be considered one of the dangerous sequelæ of tonsillitis and peritonsillar abscess.

The diagnosis should be made from primary infection of the submaxillary salivary gland, such as may occur in mumps and from phlegmonous inflammation restricted to the submaxillary glands, in which case the unilateral swelling occupies the inner under-border of the inferior maxilla. It is distinguished from simple pyogenic infection of the submaxillary lymphatic glands by the floor of the mouth not being involved in the latter affection.

It would seem that the high mortality might be lessened by prompt interference, yet many of the cases have died of uncontrollable septic complications, such as pneumonia, pericarditis, pleuritis, and blood poisoning.

Concerning the treatment little was said in relating the cases, for beyond the purely surgical measures adopted, nothing proved of any avail. An early free incision, even without waiting for distinct evidence of pus, is commended by all authorities; it may liberate only an ichorous fluid from an œdematous, necrotic, or gangrenous tissue, but in any event it will at once relieve tension and provide an avenue of escape for pus as soon as formed. When there is cervical submaxillary bulging the incision should be external, the exact line being determined somewhat by the position of the swelling, but usually to one side of the median line, and surely penetrating the mylo-hyoid muscle in order to reach the probable seat of suppuration. When the abscess points within the mouth, of course it may be there punctured, and even without distinct "pointing," exploratory punctures in the floor of the mouth, avoiding the lingual artery, are justifiable.

CYSTS OF THE FLOOR OF THE NOSE.¹

By A. BROWN KELLY, B.Sc., M.B.,

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THE variety of nasal cyst which is the subject of the present communication is quite distinct from the cyst occasionally found in polypi, and from the so-called cysts of the middle turbinate or septum.

The three cases of cyst of the floor of the nose that have come under my notice had reached different stages of growth, and a short description of these may convey an idea of the clinical features of the disease.

All three patients were females; their respective ages being twenty-seven, fifty-eight, and thirty-two. The tumour in each instance appeared in exactly the same situation, namely, on the floor of the nose at its anterior end, just behind the junction of skin and mucous membrane.

In the first case the cyst was discovered by accident, the patient being unaware of its presence. It formed a light grey, fluctuating, hemispherical eminence about the size of a pea, and was situated on the floor at the extreme anterior end of the right inferior turbinate. It had given rise to no symptoms. When punctured, a thin, pale yellow fluid exuded, the elevation subsided, and the inferior meatus assumed a perfectly normal aspect. The patient was seen two months later, when no recurrence had taken place.

The second patient complained of a fullness beneath the left ala nasi. Twenty years or so previously, in consequence of a gumboil, a hard swelling formed in the same situation, which, after persisting for several years, burst, and a yellowish fluid escaped from the nose. She had no further trouble in this region until two or three months before seeing me, when the swelling began to form again. It caused her no discomfort, and the only external manifestation was a scarcely perceptible obliteration of the naso-labial sulcus. The intranasal appearances were much the same as in the previous case, but the prominence was greater. Incision of this was followed by complete collapse of the sac, so that it was impossible to remove a piece of the wall. The patient at once remarked the difference. Three months later there was no sign of recurrence.

In the third patient, who was referred to me by Dr. Douglas Russell, the cyst had attained a still more advanced stage of development, and gave rise to marked facial disfigurement and considerable suffering. She stated that for several months she had had pains in the face, temple, and above the eye on the left side. Three weeks before coming under my charge throbbing pain had set in in the neighbourhood of the left ala nasi, and a week later she noticed a slight swelling here which had gradually increased. When first seen by me the left ala was prominent, and the corresponding nasal orifice gaped unduly. In the nose there was marked bulging of the skin lining the lower and outer part of the

¹ Read at the meeting of the British Laryngological, Rhinological, and Otolological Association, April 29th, 1898.

vestibule, and of the mucous membrane below the anterior end of the inferior turbinate. The swelling, which was very tense and tender, passed downwards into the incisor fossa, and was freely movable in relation to both skin and bone. On puncturing the prominent part in the nose, a quantity of pale yellow, transparent fluid gushed out, and a little pus on pressing the sac. The patient experienced immediate relief, and the nose assumed its normal appearance.

For the following few weeks nothing further was done, a moderate discharge, at first watery, but afterwards purulent, flowing meanwhile from the affected side of the nose. As there was no indication of this abating cocaine was injected, and the cyst cut down upon from the gingivo-labial fold. It was found lying against the periosteum in the incisor fossa, extending beneath the floor of the vestibule from the middle line to beyond the outer margin of the ala. The sac was dissected out, the wound healed in due course, and the patient experienced no further discomfort in this region.

The cyst proved to be as large as a hazel nut, with a wall of from one to two millimètres in thickness, and sufficiently rigid to maintain the lumen. At the lower end there was a soft fleshy mass. Dr. L. R. Sutherland, Senior Assistant to the Professor of Pathology in the University of Glasgow, kindly made a microscopic examination of the growth, and reported as follows: "The wall of the cyst is lined by epithelium from two to twelve cells deep. The cells of the deepest layer have a more or less cubical form, and are set on a broad basement membrane. The epithelial nuclei have a circular or oval outline, and stain sharply throughout. In certain places a tendency is shown to the formation of ingrowths into the cavity. The sub-epithelial matrix is in great part composed of loose fibrous tissue, through which very numerous dilated blood-vessels course. Here and there this tissue is overrun with round cells. The fleshy mass at the lower end is composed of altered gland tissue."

Cases of the same nature as those just described have been recorded by Chatellier, McBride, Dunn, and Knapp; and in 1894 Dr. Milligan read the account of a similar case at a meeting of this Society. Zuckerkandl, in the course of his extensive anatomical investigations, has met with an isolated nasal cyst only once; it was evidently identical with those we have at present under consideration.

Besides the cases reported by the authors mentioned, in which the affection was assumed to be of a cystic nature, a case has been described by Lacoarret of recurrent abscess of the floor of the nose, and another by Bobone of serous perichondritis of the alar cartilage, in both of which the clinical features closely resembled those of nasal cysts.

From a survey of all these cases, we get the picture of a morbid condition presenting well-defined characteristics. A brief sketch of these may perhaps be permissible, especially as there is no published account of this affection as a whole, so far as I am aware. The patients are females; but whether this has been merely a coincidence, so far the small number of cases at present on record—twelve in all—does not allow us to determine. The age has varied hitherto between nineteen and fifty-

eight. As a rule no cause is discoverable, but in several instances the onset has dated from an acute inflammation of the neighbouring tissues. The usual first indication of the cyst is the presence of a small swelling beneath the ala perceptible to the patient only. The swelling having attained a certain size, sometimes remains stationary for months and gives no trouble; sometimes, however, it enlarges rapidly and causes considerable pain. Before this stage is reached the tense and slightly fluctuating growth can be felt in the incisor fossa, where it is non-adherent to the skin and bone. The size varies between that of an almond and a walnut. As the sac develops external signs become manifest; at first a slight shelving of the lower half of the nose on the affected side, with more or less obliteration of the naso-labial sulcus; later a distinct bulging, which is best marked at the attachment of the ala. Occasionally the cyst bursts, and there is no recurrence for years. On the other hand, if secretion continues to escape by the perforation it may become purulent.

The appearances within the nose vary only in degree. When the cyst is small, it forms a greyish hemispherical eminence about the middle or outer half of the floor of the nose and just behind the junction of skin and mucous membrane. As the sac enlarges it extends backwards to the anterior end of the inferior turbinate, or a short distance below this, but rarely or never inwards to touch the septum. After the prominence in the nose has attained a certain size—on an average, that of a pea—the subsequent development appears to be downwards into the incisor fossa, and forwards.

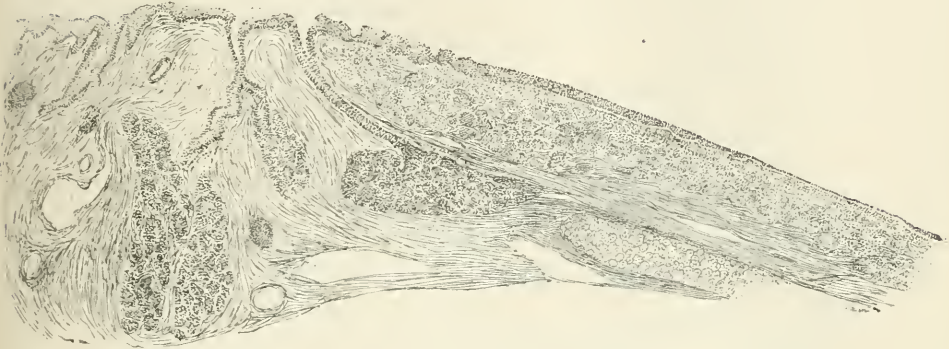
As to treatment, incision, or aspiration of the contents, with or without the injection of an irritant, suffices when the cyst is small. Persistence of the discharge after the sac has been opened may be checked by destroying the lining membrane with the galvano-cautery. When the cyst has attained a fair size, however, nothing short of its excision from the gingivo-labial fold is of avail.

Before referring to the pathology of these growths it should be mentioned that they have no genetic connection with the teeth; this is evident from their situation at an early stage, and from the fact that in several cases the teeth have been intact. The incisor foramen with its glandular contents, although suggestive etiologically, may also be excluded, it being situated deeper in the nasal fossa, and nearer the middle line. A possible embryological origin should, however, be kept in view, for the union of the superior maxillary and median nasal processes is effected at, or very close to, the region in which the cysts develop.

The views advanced as to the origin of these cysts have been purely speculative. In the majority of cases they have been regarded as retention cysts, but no explanation has been offered as to why they have always occurred in exactly the same situation, and in that only.

With the object of finding, if possible, the anatomical conditions which favour the development of cysts in this particular region, the hard palate and median portion of the alveolar arch were removed from several subjects, and series of transverse and sagittal sections were cut of the lining membrane stripped from the floor of the nose.

The sagittal sections, which included the skin of the vestibule and the underlying tissues, showed best the relations of the region in which



Antero-posterior section of floor of nose (in outer half) ; including part of vestibule, transitional area, and small portion of lining membrane of nasal fossa.

the cysts originate, and a drawing of one of these sections from about the middle of the floor is here presented.

For our present purpose it is unnecessary to do more than describe in very general terms the appearances observed. Commencing posteriorly it will be seen that the lining membrane in almost its entire thickness is made up of glandular tissue ; in passing forward, and approaching the alar cartilage, however, the membrane increases in depth, and the glands are gathered into large, sharply defined collections with fibrous tissue between. From these glandular collections long ducts pass upwards—two are shown in the figure—and open on the surface where its characters are those intermediate between skin and mucous membrane. In several instances cyst-like dilatations of these ducts were noted.

The fact that the position of these long ducts coincides with that of the cysts just described, raises a strong presumption as to the origin of the latter. The early appearance of the growth on the floor of the nose, where it attains only a limited size owing probably to the thinness and firm attachment of the lining membrane, the subsequent extension downwards through the loose connective tissue, and the similarity of the affection to perichondritis of the alar cartilage, are all in harmony with the anatomical relations referred to above.

We are, therefore, probably justified in regarding these as retention cysts. As to what may be the cause of the blocking of the duct we can merely theorize ; it is very likely, however, that at least in some cases, as above indicated, this may be of inflammatory origin.

The uniform character of the clinical features, and the constant, though possibly interrupted, course of development, entitle us to place these cases in a distinct category, which, when compared with the other varieties of nasal cysts—namely, cysts in polypi, and the so-called bony cysts of the middle turbinate—represents the most typical form of cyst that occurs in the nasal fossæ.

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CONTRIBUTION TO THE COMPLICATIONS FOLLOWING EXTIRPATION OF SO-CALLED ADENOID VEGETATIONS.

By Dr. JOHN SENDZIAK (Warsaw).

To the more important, though generally rare, complications following this operation, as I recently pointed out in my "*Manual of Diseases of the Nose, etc.*," belong—

1. Affections of the middle ear (otitis media acuta) and its consequences, perforation of the middle ear, membrana tympani, and affections of the mastoid process, etc.
2. So-called follicular angina, or, more correctly, acute lacunar tonsillitis.
3. Still more rare, secondary hæmorrhage (Newcomb's case fatal).
4. Impaction of fragments in the air passages (Helme's case).

As I have remarked, in these cases complications are relatively rare. For my own part, out of about four hundred operations, I have scarcely seen the first twice, the second several times, secondary hæmorrhage once slightly, never the others.

Quite recently I observed an unusual complication after the removal of post-nasal growths, which I will briefly narrate.

On the 7th of February last, assisted by Dr. Rorsuk, I performed the usual operation under chloroform on two children, brother and sister, aged respectively five and seven. Both children show distinct signs of scrofula (cervical adenitis), the father suffers with catarrhal otitis, the mother has chronic naso-pharyngeal catarrh, the rest of the children (four in number) have also symptoms of scrofula (cervical adenitis, adenoids, besides one has otorrhœa).

The reasons for operating on the two above-mentioned children were : in the boy, constant nasal catarrh ; in the girl, mouth breathing. The operations presented no peculiarities, and the most stringent antiseptic precautions were observed.

Notwithstanding these facts, about two hours after the operation, at 3 p.m., the temperature in both rose suddenly and without evident cause to 40° C. in the boy, and 39·6° C. in the girl. The children complained of no pain, nor was any abnormal condition found in either the nose, throat, or ear. I was unable to determine the cause of the elevation of temperature, and merely prescribed a purge and local antiseptics.

Next morning the children were both without fever and progressing favourably ; to my surprise, however, I learnt that during the night the mother, a lady thirty years of age, was suddenly seized with violent rigors (temperature 40° C.) ; this was treated as influenza, the patient receiving, in addition to a purgative, '65 gramme of salpyrine ; next morning the patient was better. In the evening, however, both her temperature and that of the girl had risen, the former to 39·5°, the latter to 38·8° C. This febrile condition in the children and in the mother was, I admit, to me quite incomprehensible, there being a complete absence of both local and general symptoms ; although I had no doubt but that the fever in all had a factor in common. A not unimportant fact was that the children had not had measles, scarlet fever, nor small-pox, all of which diseases were at this time epidemic in Warsaw ; a careful examination excluded these. Only influenza remained, there being no suspicion of any septic state. I am indebted to Prof. Baranowski for the explanation of this obscure condition. Prof. Baranowski knew the whole family well, and pointed out that the family had formerly lived in a locality steeped in malaria ; also that at the present time the spleens of each could be felt and increased dulness detected.

The further progress of the cases confirmed this view. As a result of a close investigation I found :—

1. That the children had every afternoon, at about 3 p.m., and the mother in the evening, chills, after which the temperature rose to between 39·0° and 40·0° C., and finally fell with a profuse perspiration. The fever lasted longest with the girl, viz., nine days ; the shortest in the case of the mother, viz., four days.

2. The spleens were felt by Dr. Baczhoenicz, as well as by Dr. Baranowski. The temperature chart was not kept well enough to quote but was typically quotidian malaria.

3. Chlorine in large doses gave excellent results.

4. As corroborative proof, if such were needed, was the case of the nurse, who had also come from the same neighbourhood, who, as soon as all the others were recovered, developed a typical attack herself. In this patient there was some local throat affection, confined to a moderate congestion of the nasal and pharyngeal mucosa.

5. Again, to add additional proof where none is wanted, the father, a man of forty-nine years, falls ill with a most obvious malarial attack. He suffered next day with sore throat, the mucous membrane of the soft palate and nose, with violent epistaxis.

There can be no doubt, I think, as to the correctness of diagnosis, that one had to do with a most rare complication of the post-operative state. Five persons in the same family, recently removed from a malarial district, all develop the disease. The other persons in the house remained free from the disease, the remaining children who were in the country also escaping.

In the father and nurse one had an affection of the nose and throat of malarial origin.

The following are all the cases on record :—

Chappell,¹ a case when, during an attack of malaria, a violent vaso-motor rhinitis appeared.

Cras and Tinbert² observed two cases of malarial epistaxis.

Miroljubon, a case of inflammation of the tongue of malarial origin.³

Finally, Löri,⁴ in his well-known paper on the relation between the diseases of the upper air passages and general disturbances of the economy, mentions cases of parotitis, of paralysis of adductors, and pulmonary oedema of malarial origin.

LARYNGOSCOPY IN CHILDREN.⁵

By Dr. R. PETERSEN (Berlin).

THAT the usual laryngoscopic examination of children gives few satisfactory results requires no further demonstration. In all the text-books and lectures on this subject complaints are always made of the difficulties which are met with—of the length of time and patience required before even in some measure a satisfactory result is obtained. Even in practised hands, in spite of great pains and patience, nothing—or at the most only the epiglottis and glottis—can be seen.

Schrötter states in his lectures that wilful children can make each laryngoscopic examination impossible, although he, in many cases, finally obtained a satisfactory result in spite of the anatomical difficulties from the position and form of the epiglottis, retching, and accumulation of mucus.

Rauchfuss states in Gerhardt's "*Lehrbuch der Kinderkrankheiten*" that the greatest difficulty is with children who have been made nervous and suspicious by painful local treatment of the pharynx, which makes them offer a desperate resistance to any attempt to approach their mouths.

Tobold is of the opinion that a laryngoscopic examination will seldom

¹ "Medical Record," June 12th, 1897; and "Vaso-motor Rhinitis of Malarial Origin," *Philadelphia Medical News*, November 3rd, 1894.

² "Rev. à la Région splénique pour combattre les Epistaxis chez les Paludéennes," "*Bull. Méd.*," March 23rd, 1892.

³ "T. C. f. Lar.," 30 Bj., f. 4.

⁴ "Die durch anderwertige Erkrankungen bedurgten Veraenderung des Rachens, des Kehlkopfs, und der Luftroehre," Stuttgart, 1885, p. 156.

"Therapeutische Monatshefte," March, 1889.

succeed in children under four years of age who are nervous, obstinate, and ill.

Schech states that laryngoscopy in children is most difficult, and is often impossible in spite of dexterity and patience. This difficulty does not depend entirely on the age, as it is often increased in badly trained children, by the mother or nurse making them shy with threats of the doctor. Children between two and six years are the worst, who make obvious resistance in not opening their mouths, in not putting out their tongues, in holding their breath, in not phonating, or striking themselves with rage. Better success is achieved with friendly words and patience than with severity and force. Even in obedient children, according to this author, examination is prevented, or is imperfect, owing to a dependant or abnormally shaped epiglottis, retching, or mucus.

Henoch considers laryngoscopy in children extremely difficult. In very young, and also in older children, the doctor usually meets with a forcible resistance. He allows that in favourable cases success may be obtained, but, as a rule, the results are imperfect.

Rosenberg also says in his text-book that children, who naturally do not assist, are difficult to examine. They should be taken on the lap, the hands fixed, and the head held slightly pushed back. One can frequently succeed with time and patience.

Baginsky and many others hold the same views.

It is not to be wondered at that the proposal has been made to overcome these difficulties by examination under chloroform. I have had no experience of this, but, from what I can find, it is intelligible why the results obtained are seldom satisfactory. Narcosis is, without doubt, at such an age, not without risk, and ought only to be used in extreme necessity.

I therefore consider it not uninteresting to explain a method which we have had opportunity to use in our polyclinic, and with which I have succeeded without long practice or great patience, if not at the first, anyway at the second or third attempt, and always at the first sitting.

As I shall immediately show, this method is not quite new, but it is little known or practised in the profession, so that I am anxious to draw general attention to it.

It was first described in 1878, in a work by Rauchfuss, in Petersburg, who sought to make of advantage the experience that parts of the larynx may be seen without a mirror, oftener in children than in adults, by simple depression of the tongue. He was accustomed in little children, when it was impossible to draw forward the tongue, or when the examination was urgent, to depress the tongue and immediately introduce a mirror, when he often succeeded in getting a sight of the larynx during the following inspiration. To depress the tongue he used Fränkel's tongue depressor, whose loop-shaped end adheres firmly, and allows of slight forward drawing of the tongue and epiglottis.

Moritz Schmidt, in 1894, mentions this method in his book, and considers it very practical, and often indispensable in children under two years of age.

In the spring of 1897 Escat published a paper on the subject in the

"International Archives of Laryngology," and Lack and Sutherland ("Lancet," 11th Sept., 1897) have described six cases in which they easily obtained a sight of the larynx.

This work of Escat has doubtless called attention again to this method of examination. He has constructed a special tongue depressor, which eventually can be introduced with force in children, up to the base of the tongue, which it grips. The base of the tongue, and along with it the epiglottis, by pressure and traction can be drawn forward, which, after introducing a mirror, enables a view of the larynx to be obtained.

Examination of this instrument shows its size and unwieldiness, which render difficult its introduction owing to the sensitiveness and smallness of a child's pharynx and larynx. I have not been satisfied with the attempts I have made. I think the methods are most practical which dispense with much assistance and spare both light and room. Even when one, like Escat, requires a second assistant to hold the mouth open with a gag, it is difficult enough. I have several times in my attempts caused abrasions and hæmorrhage of the mucous membrane.

Although I allow that I might avoid injuries by longer practice and better technique, I considered it necessary to search the literature if there was not a more practical instrument constructed on the same principle. The tongue spatula of Mount Bleyer, which Moritz Schmidt also recommends, owing to its lightness and form, seemed the best for my purpose.

The children were taken on the lap of an assistant; arms, legs, and the head (slightly inclined backwards) were fixed, exactly in the same position as in the operation for adenoids, and then I tried to open a way through the teeth by means of the anterior hook. When the mouth is slightly opened the hook is gently pressed backwards along the tongue to its base and the ligamentum glosso-epiglottica. It is pressed into the fossa epiglottica, and then the tongue is gently drawn forwards and slightly upwards. I now quickly introduce a laryngeal mirror and wait for the next inspiration, and obtain in most cases a satisfactory view even when the patients struggle violently. If at the first attempt spatula or mirror is not in the right position, or the view is obscured with mucus, I withdraw the instruments and repeat the operation a second or third time till I am satisfied. In this manner I have examined about thirty children from one to eight years of age, and have never sent one away without at the first sitting having seen at least part of the vocal cords.

If the epiglottis is too far over the glottis, the traction on the tongue must be increased; in this way, in most cases, the whole posterior half of the vocal cords is visible. I have never seen injury nor hæmorrhage, and I do not consider the method so rough and violent as Gottstein makes out in his book on diseases of the larynx. I have, on the contrary, several times had the experience, that in children owing to whose struggles laryngoscopy was impossible, after I had examined in this way, they were not unwilling to put forward their tongues and allow themselves to be examined like adults. This is the best proof of how gently one can go to work.

In the course of my investigations I have sometimes found the anterior

hook of Bleyer's spatula too large. I have therefore shortened this about five millimètres, and have rounded off still more the corners and edges in order in this way to exclude any injury. Further, I have found that, in introducing the spatula, the handle and lower hook often came in contact with the chest and interfered with the examination. I have, therefore, had it made with a more obtuse angle between the handle and spatula proper, and without the lower hook. I have never found that the force required necessitates a support for the finger. I have also had a somewhat smaller instrument constructed for children one year old.

This method should not be used instead of the usual examination except when that fails.

I allow that, in severe disease, as diphtheria, where the whole pharynx and larynx are filled with membrane, and there is copious supply of secretion and mucus, that this method is more difficult. The object, however, even then, will be attained by those who before have acquired the necessary technique in normal conditions.

Finally, and what is the main point, we have in this shown not only a benefit to the child, which is often problematical, but also obtained eventually, with force, a sight of the larynx—an advantage which alone is sufficient to let this method of examination become much more than formerly the common property of all laryngologists. *Guild (Trans.).*

ANNOTATIONS, &c.

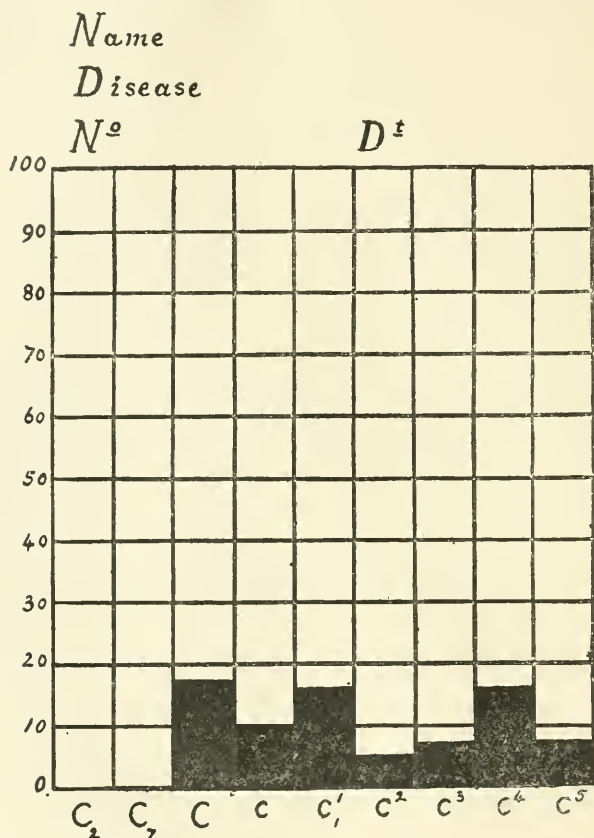
A CASE OF HYSTERICAL NERVE DEAFNESS WITH SPONTANEOUS RECOVERY.¹

By Dr. DUNDAS GRANT.

MISS A., aged eighteen, came under my care on the 27th of May, 1895, complaining of deafness of both ears, stuffiness in the nose, and pain in the throat. The deafness was of three years' duration, and it had come on gradually, but got very much worse immediately after the extraction of eight teeth three months before coming to me. For this operation she was anæsthetized with gas and ether. On examination the hearing was practically the same in both ears. She could only hear very loud conversation, and apparently only when her hearing power was supplemented by lip-reading. The watch was heard at six inches, Galton's whistle was heard up to the mark 3·8, the bone conduction on both mastoids was diminished, and Rinne's test gave a "positive" result in both ears. There was pain over the mastoids, no discharge was present, and there was no definite history of any previous discharge. At that time she described certain indefinite attacks of giddiness of which she has now lost all recollection. On testing her hearing for various tuning-forks by air conduction, she was found to have completely lost the hearing for

¹ Brought before the Brit. Laryng., Rhinol., and Otol. Assoc., April, 1898.

"C₂" and for "C₁₁" while for the other forks extending from "C" up to "E₃" the amount of hearing power varied from 3 or 4 up to 15 per cent., as shown in the appended chart.



A diagnosis was then made of nerve deafness of indeterminate origin, but probably "auto-suggestive." Ammoniated tincture of valerian was ordered, blisters were applied to the mastoid process, and galvanism by means of the continuous current to the strength of 10 ma., with the negative rheophores applied to the tragi, was employed for ten minutes at a time. The treatment was varied in the usual way, and the changes were freely rung on strychnia, bromide of potassium, and ultimately the liquid extract of ergot. No improvement of any moment took place, and with the natural result that the patient withdrew from further treatment.

At present she has come back to say that her hearing is perfectly good, it having returned in the January of 1897, after a "complication" of ailments, which confined her to bed for a fortnight. While lying in bed her hearing rapidly improved, until in six months it became perfectly

normal, and she can now hear a whisper by the right ear at the distance of about fourteen feet, and by the left thirteen feet. She has about $\frac{3}{8}$ of hearing power for the watch tick.

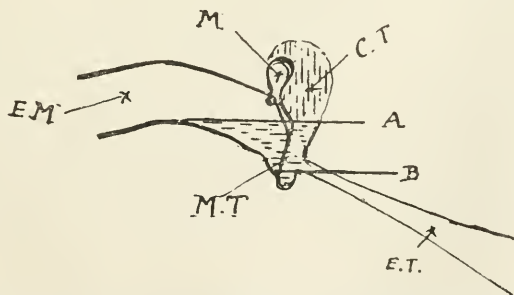
This spontaneous recovery seems to confirm the original diagnosis.

In this case the tuning-fork test for middle tones C^2 answered to the type of nerve deafness, and they were sufficient to exclude middle-ear disease. The tests for air conduction throughout the whole range of audition, indicated that the maximum of loss was for deep tones. In typical disease of the labyrinth the opposite would be the case, and we should expect to find the loss greatest in the uppermost part of the range, the lower part being relatively less defective. This combination, then, agrees with that described by Gradenigo, as typical on the other hand of disease of the nervous centres, and, in fact, exactly of what he describes as occurring in hysterical nerve deafness as set forth in his article in Schwartz's note-book. In his more recent publication on auditory disturbances occurring in hysteria, he describes the loss of hearing as being fairly uniform throughout the whole range, but more marked in the lower range on account of the physical nature of tuning-fork vibrations rather than from peculiarities in the distribution of the disease in the hearing structures. The confirmation of the diagnosis originally made has, in this case, been very late in coming, but it seems to be unquestionable.

THE RATIONALE OF REMOVING ADENOIDS FOR THE CURE OF CHRONIC SUPPURATIVE OTITIS MEDIA OF CHILDREN.

By R. LAKE.

So well known is it, that the treatment described in the title of this note is an absolute necessity, that few of us, I fear have considered the steps which make this treatment what it is, and I propose placing my views before my professional brethren in the hope that this interesting question may be more thoroughly investigated.



EXPLANATION OF DIAGRAM.—*M*—Malleus. *CT*—Cavum Tympani. *EM*—External Meatus. *MT*—Membrana Tympani. *ET*—Eustachian Tube. *A*—Level of pus with obstructed tube. *B*—Level of pus with patent tube.

1st. The removal of the adenoids necessarily allows of a restoration of the patency of the Eustachian tube; this has two direct effects—it allows of drainage, and, when the nose is blown, tends to clear the cavum and external meatus of discharge.

The diagram will render the enormous influence of a patent tube visible.

When the perforation is below or on a level with the umbo, an obstructed tube necessitates an accumulation of pus within and without the tympanum to a level with the highest point of the external meatus (line *A*), and also a further accumulation in the remainder of the cavum (here shown by vertical shading), also in the antrum and attic, until the weight of this portion of the discharge is able to force out by hydraulic pressure the discharge already in the meatus.

If, on the contrary, the tube is rendered patent, drainage into the naso-pharynx obtains, and the discharge will not rise higher than line *B*.

From this it follows that the higher the perforation the greater the intratympanic level of pus; and a large destruction of membrane, part of which is above the level of line, will cause an overflow the moment that pus obtains this level.

Perforations in Shrapnell's membrane are not included in these remarks.

A CASE OF FOREIGN BODY IN THE NASO-PHARYNX.

By W. MILLIGAN, M.D.

CASES of foreign bodies in the anterior nasal passages are not unfrequent, especially amongst children, but foreign bodies in the naso-pharynx are, on the contrary, distinctly uncommon.

A. B., a boy aged three years, was brought to me by his mother with the statement that he had "swallowed a marble" a few hours before. The child at first sight appeared to be perfectly well, but upon examining the pharynx it was noticed that the soft palate was slightly bulged forward, and appeared somewhat tense. Anterior rhinoscopy revealed nothing of any note, but palpation with a nasal probe at once showed that some hard and smooth body was lying in the naso-pharynx. The child was accordingly put under chloroform, the head being kept slightly extended during its administration. When thoroughly anæsthetized a mouth gag was inserted and the naso-pharynx palpated. At once the smooth rounded surface of the marble could be felt firmly wedged in the naso-pharynx between the septum and the post-pharyngeal wall. By means of a pair of post-nasal forceps introduced behind the soft palate, and pressure with a probe passed along the anterior nares, an ordinary red clay marble was extracted.

SOCIETY'S MEETINGS.

LARYNGOLOGICAL SOCIETY OF LONDON.

Ordinary Meeting, March 9th, 1898.

HENRY T. BUTLIN, Esq., F.R.C.S., *President, in the Chair.*

Report of Morbid Growths Committee.

From larynx of case shown by Dr. Herbert Tilley, at the November meeting, 1897. The Committee report: "Along the border of the section in the subepithelial lymphoid layer are several typical giant cells, in some of which nuclei can be distinguished, and mostly surrounded by an abundance of small-cell infiltration. Tubercle bacilli were also found in the section. Lower down is to be seen a large tubercle in a state of caseous degeneration. We consider that the case was, therefore, one of tubercle of the larynx."

From specimen shown by Mr. W. G. Spencer, on February 9th, 1898, as "carcinomatous tumour at the base of tongue and epiglottis." The Committee report that "the tumour is of malignant type, and is composed of epithelial cells. The growth is a carcinoma, but whether it originated from the squamous epithelium is not certainly shown by the specimen; it is, however, probable that such is the case."

In neither growth is there any evidence of keratinous change.

Dr. PAUL BERGENGRUN (Riga), communicated by Prof. A. A. KANTHACK. *Lepa Tuberosa of the Larynx, Mouth, and Nose, with Remarks upon the Origin and Nature of "Globi" and "Giant Cells."*

Prof. KANTHACK demonstrated for Dr. Bergengrün a complete series of photographs and coloured drawings illustrating the macroscopic and microscopic appearances of leprous lesions of the larynx, tongue, fauces, and nose; and a number of coloured sketches of the laryngoscopic images obtained in *lepra tuberosa laryngis*.

Larynx.—Indurative and ulcerative processes are well marked; ulceration along or below the vocal cords, or in false cords, is common; ulceration may be extensive, and the whole epiglottis may be destroyed. Thickening and infiltration of epiglottis, in some cases amounting to lepromata, is remarkable. Favourite seats of infection are the epiglottis, and especially its petiolus, the region just above and below the anterior commissure of the vocal cords. The aryepiglottic folds are thickly infiltrated and often nodular. The epiglottis is often curved upon itself, and may be so thickened that the interior of the larynx cannot be seen. The cords may be normal, although there is extensive disease. The mucosa over the arytenoid cartilages often becomes swollen, in the shape of thick

globular masses. The ventricular bands are almost always diseased, either infiltrated, nodular, or ulcerated.

Tongue.—The tongue frequently becomes irregular and nodular; the nodules may be large and numerous; they may be arranged symmetrically on either side of middle line, separated by a deep groove. Occasionally the "silver tongue" of L  loir may be observed, when there are flat, low, silvery, disc-like swellings on the tongue, with a finely granular surface, and also broader silvery streaks.

Uvula.—Frequently diseased; may be converted into a coarse nodular mass or into a pyriform swelling with granular, nodular, or ulcerated surface; may become fibrous and cicatrized or completely slough away.



Leprous larynx seen from behind.

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Fauces.—While the anterior fauces remain intact, the posterior become nodular or ulcerated.

Palate and Gums.—Hard and soft palate may be infiltrated with small lepromatous nodules, extending backwards in the middle line as

far as the uvula, and forwards through the incisors as far as the gums. Ulcers on the gums and palate are also observed.



Leprous larynx seen from behind.

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Nose.—Dr. Bergengrün lays special stress on the trilobed external appearance. Local cicatrization may occur to such an extent that the rima oris becomes reduced to a small opening, through which only one or two teeth can be seen.

Histological Observations.—Prof. Kanthack also demonstrated beautiful microscopical specimens and coloured drawings prepared by Dr. Bergengrün, which clearly proved two points: (*a*) that the so-called “globi” are bacillary thrombi lying in the dilated lymphatics; and (*b*) that the lepra giant cell develops from the lymphatic endothelium. As to the globi, in longitudinal section they appear as sausage or chain-like narrow strands or bands, which run through the connective tissue as

parallel streaks. These are curved and tortuous, short and long, broad and narrow, and often lie in spaces lined by a typical endothelium. The formation of the lepra giant cells is explained as follows :—The bacillary thrombi in the lymphatic vessels act like foreign bodies, and irritate the endothelium lining the lymphatics, so that here and there endothelial cells divide and proliferate. The diseased cell protoplasm cannot keep pace with the nuclear division, and the protoplasm of different cells fuses into a plasmodial mass. Thus a giant cell forms around the bacillary thrombus, gradually wrapping itself around the latter. The microscopic specimens left no doubt as to the correctness of this interpretation.

Dr. Bergengrün has once and for all settled the old controversy regarding the distribution of the leprosy bacilli, by thus showing that the intracellular distribution is almost insignificant when compared with their endolymphatic distribution. This has recently also been confirmed by Dohi, Herman, and others.

Mr. STEWART. *Case of Ozæna following Removal of Inferior Turbinate.*

P. S., a female. For some years she had suffered from the usual discharge and symptoms consequent on hypertrophy of the nasal mucous membrane. Turbinotomy was performed in 1893 for deafness and discharge from right ear. Since operation crusts have formed in the throat and back of nose, with a considerable amount of fœtor.

Dr. SPICER thought that the history of the case scarcely proved the *post et propter* aspect of the operation. The patient had a distinct history of nasal suppuration since a child, and it was possible that the operation only accentuated the intranasal drying of the discharge. The shape of the nose is also that seen in atrophic rhinitis, a condition which could scarcely have developed since the operation.

Mr. WAGGETT said the patient had distinctly told him that there were no crusts before the operation.

Mr. STEWART, in reply, stated that he brought forward the case for what it was worth. They could not, however, get over the facts that the patient stated that, previous to the operation, the discharge from the nose was what one usually finds in hypertrophic conditions of the mucous membrane, and that since the operation there had been crust formation and both objective and subjective fœtor, and that when first seen at the hospital the nose and throat were thickly coated with very offensive crusts.

Mr. EDWARD ROUGHTON. *Laryngeal Swelling.*

An iron moulder, aged fifty-two, has suffered from hoarseness for one year and eight months, and from pain on speaking and swallowing and dyspnœa for six months. Attributes his condition to inhaling fumes of sulphur. Both false cords are swollen; they overlap on phonation; some swelling of arytenoids and aryepiglottic folds; true cords remain almost immobile during respiration, and adduct with difficulty on phonation; the left moves more than the right. There is also some subglottic thickening. Œsophageal bougie passed without encountering obstruction.

Lungs.—Chronic bronchitis and emphysema. No evidence of phthisis.

No history of syphilis; gonorrhœa many years ago. Has been taking pot. iodid. for a month; no improvement.

Drs. CLIFFORD BEALE and STCLAIR THOMSON regarded the case as tubercular.

Mr. SYMONDS thought that it was possibly a case of malignant disease, and pointed out the enlarged submaxillary glands in support of this view.

Mr. ROUGHTON also showed a young woman suffering from *Lupus of Face, Nose, Palate, Tongue, and Epiglottis*.

Dr. HERBERT TILLEY. *Mechanical Fixation of Vocal Cords.*

Patient is a man aged forty-three, who two years ago applied to hospital for hoarseness and pain on swallowing of three weeks' duration. There was also slight stridor, which much increased in the course of the next few days. Examination of the larynx showed marked œdema over the arytenoids and sluggish action of the cords. There were no physical signs in the chest, nor evidence of nerve lesions of any kind. The stridor increased so rapidly that tracheotomy was performed, and the man has worn the tube ever since. He is in perfect health, and can produce a fairly good voice with expiration. Inspiration is impossible without the tube. The history of sudden onset with a cold, pain on swallowing, and œdema over the arytenoid region suggest implication of the crico-arytenoid joints, with subsequent fixation of the cords in their present adducted position.

Dr. HERBERT TILLEY. *Double Abductor Paralysis without Apparent Cause.*

Patient is a man aged forty-nine, who seven years ago applied to hospital for difficulty of breathing, especially marked on exertion. He was otherwise a very healthy man, with no abnormal physical signs in his chest, and no evidence of commencing tabes. The vocal cords were seen to be adducted, but were otherwise healthy in appearance, as also the rest of the larynx. Tracheotomy was performed at once, and without anæsthesia. After the skin incision the patient complained of very little pain.

Patient is now a particularly healthy looking man; he still has to wear his tube, and, as in the last patient, his voice is very good.

The knee jerks and pupils have normal reactions. The question arises whether such a condition might not be a form of peripheral neuritis, and whether many of the laryngeal paralyses which are seen where there is no evidence of pressure on the recurrent laryngeal may not be due to a similar cause.

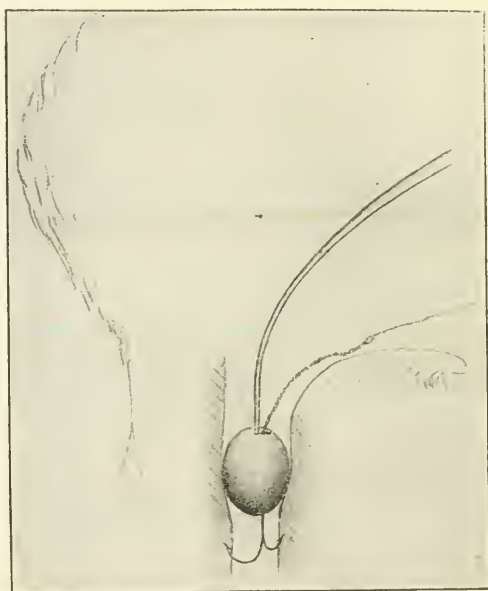
Dr. HERBERT TILLEY. *Fluctuating Swelling over the Left Ala of Thyroid Cartilage.*

Patient is a lad aged ten, with a swelling as described. It has been noticed only three weeks, and no reason can be assigned for its presence.

It extends slightly across the middle line, fluctuates, and is rather painful on pressure. The left side of the larynx (internally) is distinctly more swollen than the right, especially the left vocal process.

Mr. BUTLIN thought it was a thyro-lingual duct tumour, which are occasionally situated to one side of the median line.

Shown by Dr. STCLAIR THOMSON for Dr. WALKER (Peterborough).
Original Drawing and Description by Sir Robert Christison of a Method for Removal of a Double Fish-Hook from the Gullet (date 1819).



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[Copy.]

"Edinr., Sept. 24th, 1819.

"Dear Sir,—The rude sketch given above will communicate a pretty good idea of the mode in which the hook was extracted from the boy's throat at our hospital here about a fortnight ago. The hook was double (one division being less than the other), and had fixed itself across the gullet from before backwards, though not so far down as I have represented it. The wire attached to it hung out of the mouth. A hole was drilled through the *ivory* ball of a probang, *but not in its centre*, the reason of which is evident when it is considered that the two divisions of the hook were unequal. The boy was able to give a tolerably accurate description of its size and form, so that it fortunately happened that the ball suited it exactly; both barbs were covered by the ball, and the whole was easily removed after being first slightly pushed down in order to loosen the attachments of the barbs. The extraction was considerably

facilitated, in the opinion of the surgeon, by previous suppuration. Though it had remained about twelve days the boy recovered without a bad symptom.

"I remain, yours most sincerely,

"R. CHRISTISON."

Mr. SYMONDS. *Epithelioma of the Larynx from a Case exhibited on January 12th.*

The patient, aged fifty-five, exhibited at the January meeting, improved so much in general health, owing to local treatment, that he was able to remove the larynx on January 24th. The œsophagus and pharynx were closed anteriorly, and the muscle and skin united. The severed trachea was attached to the skin just above the sternum. Primary union took place in the greater part of the wound, and the man was able to swallow after twenty-four hours, and made an excellent recovery.

Mr. Symonds exhibited the patient, who showed great improvement in general health.

The disease proved extensive, as the specimen showed. The right ala was penetrated by growth, and the left partly destroyed. There was also considerable extension to the pharynx, a further inch having to be removed after separation of the larynx. The specimen showed extensive disease of the whole interior of the larynx, the cords being destroyed. The starting point was probably in front below the left cord, but as both sides were almost equally involved it must have really spread to the right.

Though rapid extension took place after the man was exhibited on January 12th, the pharyngeal growth must have existed at that time. No enlarged glands were found at the operation.

The microscopic characters were those of a squamous-celled epithelioma.

Mr. ERNEST WAGGETT. *Microscopic Specimen of Early Epithelioma of Vocal Cord from Dr. Tilley's Case shown at February Meeting.*

The correctness of the diagnosis was abundantly proved by the nature of the specimen.

Dr. DAVID NEWMAN. *Post-Mortem Specimen of Epitheliomatous Larynx which had been Twice Operated Upon.*

The author showed the larynx removed, *post mortem*, from a man who had thyrotomy performed twice for epithelioma.

The patient was first operated on for epithelioma on the anterior third of the left vocal cord in 1890, by thyrotomy,¹ and no recurrence took place till 1893, when a small growth, the size of a barleycorn, was discovered close to the anterior commissure, and on removal proved to be an epithelioma. From 1893 till 1897 no appearance of recurrence, although patient was examined regularly every two months. In March, 1897, symptoms of slight laryngeal obstruction and evidence of œdematous swelling in larynx, which prevented a complete view of larynx being obtained. Laryngeal symptoms were accompanied by symptoms and

¹ See Newman, "Malignant Diseases of the Throat and Nose," p. 93.

physical signs of chronic parenchymatous nephritis. Patient died suddenly from laryngeal oedema, and, *post mortem*, the larynx was found to be occupied by an epitheliomatous ulcer.

Dr. DAVID NEWMAN. *Naso-Pharyngeal Papilloma.*

The author also showed a very large papilloma removed from the naso-pharynx of a young man. The growth was the size of a hen's egg.

Dr. WILLCOCKS. *Adhesion of Soft Palate to Posterior Pharyngeal Wall.*

Mrs. R., aged forty-three. This patient had always enjoyed good health until eleven years ago, when at about a month after her confinement (the fourth) she had an ulcerated throat. She is the mother of five children, all living and healthy, and has had no miscarriage.

Present condition.—The soft palate is adherent to the posterior pharyngeal wall, and the only communication with the naso-pharynx is a small slit in the median line of the soft palate.

The vocal cords are normal, but the edge of the epiglottis is somewhat nodular.

For the last two months she has been taking a mixture containing liquor hydrargyri perchloridi and iodide of potassium.

Mr. SYMONDS thought, as there was an opening into the nose, the patient had better be left alone. A small aperture permitted respiration and descent of mucus, and prevented the cleft-palate voice.

Mr. SPENCER said that, with regard to the operation for the separation of the soft palate from the pharynx, he had never done nor recommended it except for the relief of distinct complication, Eustachian obstruction with pain in the ear, persistent laryngitis from breathing through the mouth, and so forth.

Mr. WALSHAM. *Case of Syphilitic Pharyngeal Stenosis.*

Patient is a middle-aged man in whom the soft palate is drawn into contact with the posterior wall of the pharynx as the result of cicatrization following tertiary syphilitic ulceration. There is also destruction of the septum and falling in of the bridge of the nose.

Sir FELIX SEMON. *A Case of Rhinitis, Pharyngitis, and Laryngitis Sicca.*

The patient is a gentleman aged forty-eight, sent by Dr. Rattray of Upper Holloway, who began to suffer from a discharge from the right nostril without any definite cause being known. Crusts were formed in the right nostril, and also often evacuated through the mouth, whilst the throat became dry and the voice gradually hoarse. There has never been any dyspnœa. The patient has not lost the sense of smell, and is not aware that the discharge has ever been very foetid. On examination the right nostril is found to be abnormally wide, with considerable atrophy of the lower and middle right turbinated bones, but without any evidence of actual disease of the bony framework of the nose or of any of the accessory sinuses. Further, there is considerable dry naso-pharyngeal and pharyngeal catarrh, with formation of crusts, after removal of

which the mucous membrane looks wrinkled and shining. In the larynx on the first examination both vocal cords were completely covered with green dry crusts, after removal of which the cords appeared red and dry, whilst the ventricular bands were considerably swollen and equally dry. The patient having been treated for a week with benzoïn inhalations and the use of salt water injections into the nose by means of a Higginson's syringe, all the conditions described appeared to be considerably improved on the occasion of his second visit, but as soon as these simple cleansing measures are neglected the previous conditions return.

The case is shown, first, on account of the one-sidedness of the atrophic rhinitis, which, in the observer's experience, is comparatively rare, unless due to a distinctly local process, such as impaction of a foreign body, or disease of the accessory cavities, or again to a syphilitic process, of all of which contingencies there is not the least evidence in the present case.

The second remarkable feature consists in the persistence of the process. In the observer's experience ordinary *ozæna* usually exhausts itself about the age of forty or thereabouts, but it is remarkable that in a man of forty-eight, like the patient, it should still be so active.

The third remarkable fact is the extension of the process into the larynx, which, in this country at least, is very rare. It is seen with slightly greater frequency on the Continent.

Sir FELIX SEMON. *Case of Very Uncommon Laryngeal Tumour.*

The patient, aged forty, is a married lady who formerly lived in North-West Canada, and up to about ten years ago enjoyed good health, apart from the fact that she sometimes suffered from slight "spasms in the throat." Ten years ago she first observed a swelling in the left sub-maxillary region, which gradually grew until it attained its present size,—that of an average walnut. At first it gave no discomfort, and particularly caused no difficulty in breathing, or, so far as she knows, in the voice. In spring and autumn it used to swell, but always returned to its previous size. Gradually it became tender on pressure and her breath became permanently short, whilst the previous attacks of spasms in the throat increased in severity. She went to Montreal and consulted Dr. Major, who found not only the external growth as described, but also a growth in the larynx. He is stated to have attempted to puncture the latter, but without striking fluid. He also tried, according to the patient's statements, to snare the laryngeal growth, but the snare broke. Dr. Major then recommended the patient to go to England and to take further advice; he had never seen a similar growth. The patient went to London and was treated in a special hospital. This was seven years ago. Her medical attendant is stated to have attempted to snare the intralaryngeal growth off with the galvano-caustic snare, but to have brought up a very small piece of growth only, whilst during the attempt the throat and the tongue were severely burnt. Three weeks afterwards her difficulty in breathing had increased to such a degree that tracheotomy had to be performed. This was followed by immediate relief of the breathing and very great improvement in general health, the patient

previously, according to her description, having wasted away to a skeleton. The little piece of growth removed was stated by her attendant to have been of a malignant nature,—indeed, of a cancerous character. No further attempts were made to interfere with the intralaryngeal growth. The external swelling has never been explored. Two years ago the external swelling, in the spring, again became so much increased and gave the patient so much discomfort that she returned to her medical attendant, who is said to have thought that there was fluid in it, but he did not want to perform any further operation unless it was absolutely necessary. No further steps were then taken. Recently there has been again some external swelling, which has now subsided, with a good deal of shooting pain in the throat extending to the jaws and to both ears. All this is again better now. The patient has not recently lost flesh, and has never had any dysphagia. Her voice is so surprisingly clear and strong, although she still wears a tracheal canula, that the history, as given above, was listened to with a certain amount of incredulity. The result of the objective examination, however, was very surprising. Externally the small tumour in the left submaxillary region was tender to the touch, and any pressure on it, unless extremely gentle, each time caused immediate retching and cough. It was, however, ascertained that it was not adherent to the skin, and somewhat mobile in various directions, although it seemed to be fixed to something very low down. No enlargement of lymphatic glands in its neighbourhood. On laryngoscopic examination a very surprising condition was seen. Whilst from the almost normal voice one would have expected a corresponding normal aspect of the larynx, it is seen that almost the whole laryngoscopic image is filled out by an enormous tumefaction of the left half of the larynx, which above extends to nearly the free border of the epiglottis and below to the left arytenoid cartilage. All the constituent parts of the larynx within that distance have perished, as it were, in the smooth round tumefaction, covered by apparently normal mucous membrane. Of the epiglottis itself not much more than the free border can be seen, which is twisted so that the epiglottis is looking towards the right. From this small remnant, both on the dorsal and on the ventral aspect, the tumefaction of the left side begins, which involves the ventricular band, the aryteno-epiglottidean fold, and the arytenoid cartilage. To the right of this tumefaction a small chink remains, which is bordered on the right by the right ventricular band. Neither of the vocal cords can be seen, and it can only be concluded from the integrity of the voice that the left vocal cord cannot be involved in the process. The right arytenoid cartilage moves well; the left half of the larynx is almost immovable. On touching the tumefaction with the probe a feeling of an elastic resistance is encountered, similar to that experienced on pressing the external tumour.

The observer wished to have the opinion of the Society on this most uncommon condition, the like of which he did not remember having ever seen.

Dr. NEWMAN regretted not having heard the history of the case, and judging merely from the clinical appearances he thought it looked like a

sarcoma ; the long history, however, was somewhat against this suggestion, and he should suggest it was a fibrous or fibro-cystic growth.

Dr. SPICER thought the tumour encapsuled, and that if the mucous membrane were divided it would shell out.

Mr. SYMONDS found difficulty in deciding what was the relation of the outside to the inside tumour. He thought the case might be surgically attacked, and without any great danger.

Mr. DE SANTI remarked that, though very uncertain as to the nature of the tumour, he inclined to the opinion that it was a slowly growing fibro-sarcoma. With reference to Dr. Newman's remarks, he would point out that the history of eight years' duration was not incompatible with a diagnosis of sarcoma. Recently he had had under his care a girl of twenty, who for eighteen years had had extensive tumours of the neck and scalp. Six years ago one of the largest was removed by one of his colleagues, and Dr. Hebb, a well-known pathologist, reported it to be a fibro-sarcoma. Four and a half years ago another was removed, and also reported to be a fibro-sarcoma. Last summer Mr. de Santi made a clean sweep of all the tumours, some thirty or forty, and those, microscopied by Dr. Hebb, showed almost pure fibrous structure. The girl got quite well, but some ten months after died with supposed secondary growths in the lungs. He hoped to hear soon from the medical man who did the *post-mortem* whether there were definitely secondary growths or not. At any rate the case showed the very slow malignity of some of these cases of sarcomata.

Mr. BUTLIN thought that possibly the tumour was glandular in nature, and might be an extension or outgrowth of the thyroid gland, and pointed out that the external tumour moved with the hyoid on swallowing. He thought that an operation for removal might be attempted, and with prospects of success.

Sir FELIX SEMON was glad to hear the suggestions which had been made relative to active interference with the tumour, but he could not yet make up his mind as to whether he should advise the patient to undergo the risks of such a severe operation as the case would necessarily entail. At present the patient is comfortable, her voice is good, she has no trouble with the tracheotomy tube, and the tumour is obviously a very slowly growing one. On the other hand, an operation, the extent and limits of which we cannot foretell, has been suggested for a tumour of whose nature we are ignorant, and which is probably closely connected with the vagus—an operation which, therefore, is necessarily of a very serious nature. At present he thought he would watch the case a little longer, and report later to the Society as to what course, if any, had been adopted, and its results. The Society was indebted to Mr. Ernest Waggett for the accompanying sketch of the tumour.

Dr. BRONNER. *Localized Thickening of Interarytenoid Fold of Tubercular Origin.*

The author showed a microscopic specimen of hypertrophy of the mucous membrane of the interarytenoid fold of eleven years' duration. The patient, aged thirty-four, was first seen in November, 1894. She

complained of hoarseness and occasional loss of voice for over seven years. The symptoms were not increasing in severity. There was the well-known thickening of the interarytenoid fold. Sprays, insufflations, were tried. The parts were then removed with cutting forceps several times; they always grew again. The use of the galvano-cautery was equally ineffectual. The patient was under treatment for nearly two years. The present appearance of the parts was just the same now as it had been four years ago. The Clinical Research Association had reported: "There are several distinct tubercles having a nodular outline, and large giant cells. Other pieces consist of ulcerated mucous membrane, the raw surface being covered with granulation tissue. The evidence points to the existence of tuberculous laryngitis."

The mother of the patient had died of phthisis, and patient had nursed her for some months. There were no other symptoms of tuberculosis.

Dr. Bronner wished to have the opinion of the meeting:—(1) If many cases of chronic thickening of the interarytenoid fold, without any apparent cause, were of tubercular origin? (2) If there was any danger of the disease spreading?

Dr. HERBERT TILLEY referred to a case which he had shown the Society nearly twelve months ago. He pointed out that there were two distinct forms of thickening found on the anterior face of the arytenoid commissure. (1) Tubercular granulation tissue such as was shown at the last meeting by Mr. Lake. The granulations were soft, easily removable, and tended to recur rapidly. Associated with this condition one found signs of tubercle in the lung or in the larynx. (2) That form which is found in cases of chronic laryngitis, especially in alcoholics, and not in any way associated with tubercle. The growth is a tough, fibrous hyperplasia covered with epithelium natural to the part. Often there is a vertical fissure in it, and then there is usually sharp pain on swallowing. He did not know what was the best treatment for such a condition, though galvano-cautery, lactic acid, and removal of pieces by forceps (cutting) only seem to give temporary relief, and he was inclined to believe that such cases did best when left alone.

Mr. SPENCER also thought that such a condition would not increase if it was left alone.

Dr. JOBSON HORNE observed that the section of the part removed showed, under the microscope, an increase in the breadth of the epithelium, with papillæ passing into the subepithelial layer. Accompanying this hyperplasia there was a metaplasia of the cells constituting the condition of pachydermia. He attributed the condition to the chronic irritation caused by the subjacent tubercle.

Mr. DE SANTI. *Extensive Syphilitic Adhesions of Soft Palate.*

The author showed a woman on whom he had operated for extensive syphilitic adhesions of the soft palate to the posterior wall of the pharynx. The patient's mother had suffered from syphilis, the woman herself had inherited the disease, yet after marriage she contracted the disease again, and her child had congenital syphilis. The whole of the naso-pharynx was cut off from the oro-pharynx by the dense adhesions, and recently

patient had had intense pain in the right mastoid and ear. There were old perforations of both drums, and the patient was deaf to both air and bone conduction. The pain in the ear and mastoid always started from the throat. Mr. de Santi operated by thoroughly separating all the dense adhesions with scissors and knife as close to the pharynx as possible. There was but little bleeding. On the left side no soft structure could be detached, but on the right side a fair amount of tissue was separated and then stitched forwards to the muco-periosteum of the hard palate, according to Mr. Spencer's method. The case did very well, re-adhesion did not take place, and the patient became entirely free from the mastoid and ear pain. She also now is able to speak better, and all post-nasal discharges pass down the normal way. She is able to blow her nose and breathe with her mouth shut.

MR. DE SANTI. *Ivory Exostosis of Frontal Sinus causing Pressure Symptoms.*

The author also showed a case of a man suffering from an ivory exostosis involving the right frontal sinus, and which had by pressure caused a suppurating mucocoele. The man had had the exostosis for over five years, but beyond the disfigurement had not troubled about it until within the last ten days, when the whole of the parts at the inner canthus of the eye began to swell and cause pain. The exostosis was a very hard, large, and sessile one, and Mr. de Santi dealt with the abscess only by incision and scraping, and proposed to operate on the exostosis a little later. If left alone it would probably destroy the right eye.

MR. DE SANTI. *Syphilitic Periostitis of Forehead.*

The author also showed a case of a man with a syphilitic periosteal swelling in the mid-frontal region of the head, just above the articulation of the frontal bone with the nasal bones. It was of interest, because the patient two years ago had been shown by his colleague, Mr. Spencer, for symmetrical enlargement of both parotid glands. Some of the members of the Society, notably Dr. Lack, had considered the case to be syphilitic parotitis. At any rate, under iodide of potassium both parotids soon resumed their normal size. It was, however, of interest to note that concomitant with the diminution in size of each parotid gland there was a yellow discharge from each ear. This discharge did not last long, and there is no sign of perforation, recent or old, to be seen in the membranæ tympani. Nor at the time of the enlargement of the parotids was there any "dry mouth" or symptom of obstruction of the parotid ducts.

MR. LAWRENCE. *Tumour of Lower Lip.*

The author showed a case of tumour in middle line of lower lip in a man aged sixty-one. Disease of a warty character, and hard and ulcerated. No history of previous disease and no loss of flesh. There was little doubt but that it was malignant.

MR. LAWRENCE. *Enlargement of Tonsils after Tonsillotomy.*

The author showed a young woman, aged twenty-two, who had been "troubled with her throat" for twelve years. Tonsils were removed last

November. Since then they have grown considerably, and there are masses of large glands behind and below the angles of the jaw.

Mr. BUTLIN and Sir FELIX SEMON thought the case was one of syphilis occurring in a tubercular subject, an opinion generally concurred in by other members.

Mr. SPENCER thought it was possibly a slow diphtheritic growth, and suggested that a bacteriological investigation should be made.

Mr. R. LAKE showed a pair of *Punch Forceps* for use in double curetting of the larynx in tubercular laryngitis.

Mr. ATWOOD THORNE. *Gumma and Perichondritis of Nose, and Bilateral Abductor Paresis of Vocal Cords—for Diagnosis.*

Dr. T. LAMBERT LACK. *Case of Phthisis and Healed Laryngeal Tuberculosis.*

The patient, a girl, aged nineteen, came under his care in July, 1896, complaining of hoarseness and cough. The symptoms pointed to an acute but early phthisis, the lung signs being most marked at the right apex. The sputum was crowded with tubercle bacilli; there was a history of night sweats, cough, etc., for three months, but not much interference with the general nutrition. On laryngeal examination the right ventricular band was seen to be much swollen, and its anterior two-thirds covered with pale fleshy granulations. The anterior third of the left ventricular band and the intervening area of the anterior part of the larynx were similarly affected. The vocal cords were congested, but the rest of the larynx appeared normal. The whole of the apparent tubercular tissue in the larynx was removed with the cutting curette in some three or four sittings; on each occasion chromic acid fused on a probe was applied to the resulting raw surface. This somewhat extensive surface healed readily, lactic acid being occasionally applied to stimulate it. After about two months' treatment the larynx was entirely healed, and the patient's general condition had considerably improved. Now for more than eighteen months the patient has had no further treatment, the disease in the chest has quieted down, and the general health remains fairly good, although the patient has unavoidably continued work as a waitress in London.

The larynx remains healed, the absence of the right ventricular band disclosing a large part of the upper surface of the right vocal cord.

Dr. CLIFFORD BEALE agreed that healing had taken place in this case, but pointed out that there was still a good deal of difference on the two sides. The patient's throat showed none of the characteristic anæmia of tubercular disease, the mucous membrane looking particularly well nourished—an important point in the selection of cases for operation. He thought that surgical wounds of the ventricular bands were more likely to heal than those made in the interarytenoid space, as being less likely to become infected by secretions from above or below. He congratulated Dr. Lack on the results obtained. The successful removal of foci of active disease from the larynx showed a distinct advance in treatment.

Ordinary Meeting, April 13th, 1898.

HENRY T. BUTLIN, Esq., F.R.C.S., *President, in the Chair.*

Mr. WYATT WINGRAVE. *Cyst of the Epiglottis.*

A girl aged thirteen complained of sore throat and occasional deafness for six years, on and off, following scarlet fever. Her tonsils were removed four years ago, when nothing wrong with her throat was noticed.

On examination a mass is seen attached to the left half of the laryngeal aspect of the epiglottis, resembling a small white-heart cherry in size and colour. The only symptom is occasional pain on swallowing, her singing and speaking voice being normal.

Dr. LAW said that he had often noticed these cases following excision of the tonsils for chronic hypertrophy, and questioned whether a traumatism might account for them.

Mr. WYATT WINGRAVE. *Case of Chronic Pharyngitis.*

Man aged twenty-six has been under treatment for chronic suppurative middle-ear disease for six years.

Suspecting adenoids, his pharynx on examination showed a symmetrical flesh-like thickening, which commenced behind the posterior pillars and met in the middle line above the level of the soft palate, extending upwards into the naso-pharynx. This tissue proved tough on attempting to scrape with finger-nail.

There is a doubtful history of hereditary syphilis.

Is the condition due to asymmetrical hypertrophy of the lymphoid tissue? or is it of inflammatory origin?

Dr. SPICER called attention to the adhesion in this case between the salpingo-pharyngeal fold and the pharyngeal wall, as had been observed in connection with Tornwaldt's disease.

Dr. GRANT ascribed the condition to hyperplasia of the salpingo-pharyngeal folds, which had become adherent to each other at a lower level than the choanæ.

Mr. SPENCER advised removal of the bands on account of deafness.

Dr. HILL suggested that it was a case of adhesion of the lower portion of the hypertrophied salpingo-pharyngeal fold to the posterior pillar of the fauces.

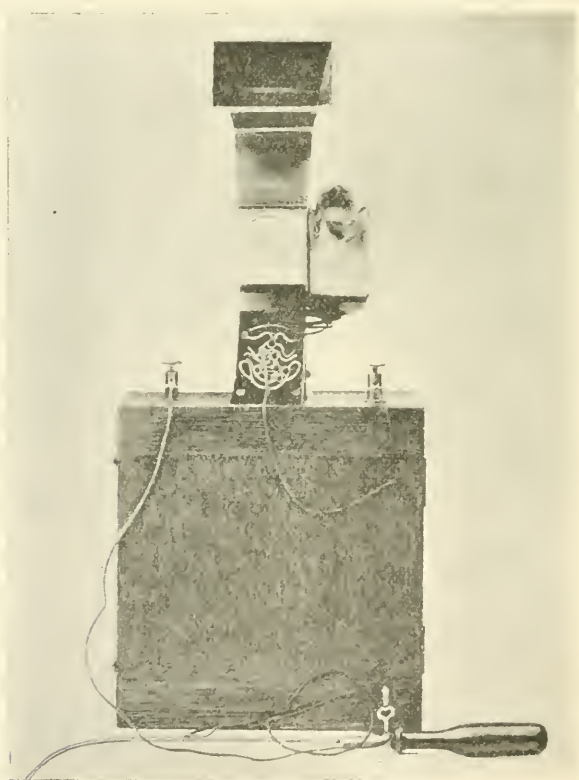
Dr. EDWARD LAW thought it resembled a gummatous condition of the lateral pharyngeal wall.

Dr. STCLAIR THOMSON suggested that the condition might be an hypertrophy left by a syphilitic process. He had seen a gumma in the region of Luschka's tonsil break down in the upper part, but leave a thickening across the pharyngeal wall—at the level of the soft palate—and uniting with a hypertrophic lateral pharyngitis of both sides. This condition had remained unaffected by antisyphilitic remedies. In the present case some further help might be obtained by the microscopical examination of a portion, which could easily be removed for that purpose.

Mr. WINGRAVE, in reply, said that on digital examination the finger simply passed between the soft palate and the deposit, upwards to a free and well-defined vault. The deposit did not *hang* in front of the posterior pharyngeal wall, but was flush with it. There was a doubtful history of congenital syphilis which suggested a possible pre- or post-natal inflammatory process.

Dr. DUNDAS GRANT. *Modification of Baratoux's Electrical Laryngo-Phantom.*

In the original instrument there is a model of the larynx with a number of metallic points at definite positions. Each of these points has in communication with it a flexible wire and a pin, to which a numbered



label is attached. In front of a machine is a tracing of the larynx, on which the corresponding points are numbered.

When the student wishes to exercise himself in touching with the laryngeal probe any given point in the larynx, the pin corresponding to that point has to be selected by its numbered label (the number having been discovered by examination of the aforesaid tracing), and is then

fixed in a screw connection. When this is done, and the probe is made to touch the correct spot—and no other spot—a loud electric bell rings. A considerable time is spent in seeking out the proper number, label, and pin, and the present modification has been devised by Dr. Grant to minimize this trouble.

The pins and labels are removed, and in the place of them there are small pieces of brass tubing. These are inserted in the appropriate places in another tracing of the larynx on an ebony plate. All that is then necessary is to insert the single pin into the appropriate hole on this tracing, and the necessary connection is at once complete.

(The instrument in this form was tested by many of those present at the meeting, and was highly approved by them. The original instrument is manufactured by Gaiffe, of Paris, and the modification has been effected by Mr. Trood, of London.)

DR. DUNDAS GRANT. *A Case of Empyema of the Frontal Sinus cured by the Ogston-Luc Operation.*

The patient was a man, aged forty, who had suffered from foetid purulent discharge from his left nostril, accompanied by pain in the left frontal region, which he alleges to have been only of six months' duration. The discharge was traced to the middle meatus, but, by transillumination and exploratory irrigation, disease of the antrum was excluded. On transillumination of the frontal sinus there was found to be distinct comparative opacity on the left side. The anterior extremity of the middle turbinated body was considerably swollen.

Relief was afforded by cocainization of the middle turbinal, followed by the use of Politzer's bag to the left nostril while the opposite one was closed with the finger; both ears were stopped up, and the patient uttered the sound "ee." As a palliative measure this process was carried out for some time by his family attendant, and an alkaline antiseptic douche was employed to wash away the pus as it collected. The patient was laid up with an attack of gout, so that he disappeared for some time, but his nasal condition remained comparatively unchanged, and he came into hospital for operation by Luc's method—a free opening, thorough curettement, the insertion of an india-rubber drainage tube through the infundibulum, and immediate closure of the operation wound by suture of the periosteum and then of the superficial parts. The patient was kept in bed, and unfortunately had almost immediately a recurrence of his gouty or rheumatic joint affection, which involved his right wrist-joint. The wound in the eyebrow healed almost entirely by first intention, although there was on one occasion a slight temporary superficial oozing from the inner extremity, which, however, was not visible when Dr. Grant inspected it. The drainage tube was extracted on the tenth day. A glass syringe was applied to the extremity of the drainage tube which protruded from the nostril, and an extremely minute quantity of pus was withdrawn. This was repeated daily, and at the end of a week a fine intratympanic tube was pushed up through the drain, and the sinus was washed out with boracic acid, pressure being exercised over the wound during the process, a precaution also adopted whenever the patient

wished to blow his nose. This was repeated on three successive days. By that time the patient's arthritis had disappeared, and he was allowed to return home. He is now free from pain and from discharge, there is no disfigurement, and the middle meatus of the nose is quite dry.

Mr. WYATT WINGRAVE. *Microscopical Section of Tissue from Frontal Sinus (Dr. Dundas Grant's Collection).*

This consisted of small-cell or lymphoid tissue, containing nodules similar to ordinary adenoid growth.

Dr. STCLAIR THOMSON directed attention to the fact that at that meeting there was a demonstration of the presence of adenoid tissue in the lining of the frontal sinus, and in the hypertrophies of the arytenoid bodies, while it was well known that adenoid tissue could be found in the hypertrophies of the inferior turbinals. He would like to ask pathologists—especially those whose practice was not limited to the upper air passages—what their views were as to this distribution.

Mr. SPENCER remarked on the development of lymphadenomatous tissue after chronic irritation, and considered the tissue in the frontal sinus to have been antecedent to the suppuration. He also referred to the difficulty of distinguishing diffuse forms of tubercular formation from lymphadenomatous tissue. In some cases histological examination did not solve the question, and the only thing would be the inoculation into animals.

Dr. PEGLER thought the presence of normal lymphoid tissue in the section very remarkable.

Mr. SYMONDS suggested that it might not be out of place to mention the possible dependence of the adenoid tissue in this case upon tubercle. He referred to one instance of persistent suppuration of the frontal sinuses, which resisted curetting and the use of iodoform, and subsequently died of pulmonary tubercle.

Mr. WINGRAVE, in reply, said he considered that it was not of a tuberculous nature, owing to the strong resemblance which it bore to ordinary pharyngeal tonsil tissue, and the regularity of the grouping of the lymphoid nodules.

Mr. W. G. SPENCER. *Œdematous Hypertrophy of Arytenoids.*

More than a year ago Dr. de Havilland Hall showed the patient, a man aged forty-seven, to the Society. It was difficult to get a good view of the laryngeal condition, and the case was considered to be an unusual one of chronic laryngeal œdema. The history of the affection was mainly negative, merely a gradually increasing hoarseness and difficulty in breathing. After this Dr. Hall tried to remove some of the swelling by intralaryngeal forceps under cocaine. But before he could do anything the patient had a bad fainting attack.

As dyspnoea was increasing the extralaryngeal method became necessary. On retracting the alæ of the thyroid cartilages I found that each arytenoid had become a tumour of the size of the thumb, with a perfectly smooth surface, and that there was but very little change in the size of the larynx. Each tumour was seized with a volsella and cut off

with scissors, the line of division being through the apex of the cartilage. There was no important hæmorrhage. Healing occurred, and the patient has remained well for a year, except for an occasional catarrh. On examining the larynx now there is not much deviation from the normal, except that the arytenoids appear flat-topped.

Under the microscope the tumour is seen to be a soft œdematous fibroma, covered by normal stratified epithelium, and containing normal arteries, veins, and nerves, also groups of mucous glands embedded in it.

The peculiarity of the case lies in the situation of the affection, as it is evidently the same as the common hypertrophy of the inferior turbinal. It was clearly of inflammatory origin, not liable to recur.

MR. YEARSLEY. *Papilloma of the Septum Nasi.*

The patient, aged twenty, complained of pain in the right nostril, lasting three months. There was occasional slight bleeding on rubbing, picking, or blowing the nose. Latterly she had found some difficulty in breathing through the right side of the nose. On inspection the condition was as shown in the photograph kindly taken for me by Dr. Fallows. The growth was situated upon the cartilaginous septum, about three quarters of an inch inside the vestibule. There was also some hypertrophic rhinitis and a small spur on the right side.

The growth was easily removed under cocaine with a cold snare, the hæmorrhage being very trifling.

The specimen shown under the microscope passes through the delicate fimbriæ, and shows the growth to be a papilloma.

Dr. Logan Turner showed one specimen before this Society on December 9th, 1896.¹ Another, in a man aged eighty-two, was reported by Mr. de Santi in the "Lancet."² A third case (that of a Roumanian woman aged twenty-eight) was brought before the American Laryngological Congress of 1895 by Wright. To Wright's and De Santi's papers I would refer members for other published cases.

DR. LAMBERT LACK. *Case of Laryngeal Stridor and Nasal Obstruction.*

The patient is a weakly child aged five months. Within a few hours of its birth it was noticed that respiration was accompanied by a crowing noise, and this has continued more or less since. The infant has almost complete nasal obstruction, and snuffles and snores a great deal. Also at the end of inspiration there is a higher-pitched, much louder sound, which, as far as the ear can judge, is true laryngeal stridor. When the child is awake and breathing through the open mouth this stridor is very slight or quite inaudible, but it at once becomes marked if the mouth be closed as in suckling. Also in sleep the stridor is intensified, and sometimes the patient's rest is disturbed by severe suffocative attacks. There is recession of the chest walls on inspiration, apparently constant, but varying in amount. The child is wasting, and seems to be much enfeebled. The case seems to be one of laryngeal spasm, probably due to adenoids.

¹ "Proceedings of Laryngological Society of London," Vol. IV., p. 21.

² December 8th, 1894.

It is proposed to give an anæsthetic, to examine the throat thoroughly, and remove the adenoids or other cause of nasal obstruction.

Dr. HILL suggested the explanation that the cause of the stridor was that the tongue in certain positions alluded to fell back on the pharynx, pushing with it also the epiglottis, and so causing partial collapse of the vestibule of the larynx.

Dr. SPICER thought the obstruction was intranasal rather than post-nasal, and recommended treatment in that direction.

Mr. SYMONDS called attention to the emaciation of the child and the appearances of general illness, and suggested that the difficulty of breathing when the mouth was shut might be due to the child not inspiring sufficient air into a diseased lung. He did not question the fact of post-nasal obstruction. He suggested a post-pharyngeal abscess as a cause of the child's illness, or possibly pulmonary tubercle.

In reply, Dr. LACK said that there was no malformation of the upper aperture of the larynx in this case. Judging purely from the characters of the sound he thought the stridor was produced in the larynx, probably by the vocal cords; there was no direct evidence of this. The air entered the chest badly, and there was probably some collapse of the bases of the lungs; this was the usual condition in all cases of congenital laryngeal obstruction.

ABSTRACTS.

DIPHTHERIA, &C.

Cobbett, L.—*Alkalized Serum as a Culture Medium for the Bacterial Diagnosis of Diphtheria.* "Lancet," Feb. 5, 1898.

ALKALIZED serum has this obvious advantage over ordinary serum as a solid culture medium, that it remains transparent when sterilized at a high temperature. The medium was first described by Prof. Lorrain Smith in 1894, and since that time it has been used in the pathological laboratory at Cambridge, and has been found very useful for the diagnosis of diphtheria, and for the cultivation of the Klebs-Loeffler bacillus.

Full particulars are given of the methods for preparing alkalized ox and horse serums.
StClair Thomson.

Hilbert, Paul.—*Why should Serum be Injected as Early as Possible in Diphtheria?* "Deutschen Med. Woch.," April 14, 1898. From the Hygienic Institute in the University of Königsberg.

THE answer to this question is deduced from the experiments of the author on the pathology of mixed infection. A timely injection of serum prevents the entrance of a mixed or secondary infection in many cases by the destruction of the diphtheritic infection, as it makes impossible the increase of virulence by the accompanying streptococci.
Guild.

Kossel, H.—*Diphtheria Statistics from the Institute for Infectious Diseases in Berlin.* "Deutschen Med. Woch.," April 14, 1898.

THE present statistics are greatly in favour of Behring's treatment. From 1894 to 1898 the mortality from diphtheria in the Kinder Charité was less than half what it was in the same time before serum was introduced. During 1896 and 1897 the death rate from diphtheria in the whole of Berlin was only equal to what it was in favourable years in the charity hospitals. The mortality per cent. is now about a third of the former rate. In 266 German towns with over 15,000 inhabitants, from 1886 to 1894 the average death rate was 104 per 100,000; from 1895 to 1897 it was only 44.

Guild.

Litchfield, W. F. (Sydney).—*Some Notes on the Slow Pulse following Diphtheria, with a Case of Very Slow Pulse.* "Australasian Med. Gazette," Feb. 21, 1898.

REFERRING to the slowness of pulse following some cases of diphtheria, the author holds that it is a paralytic phenomenon, and that the lesion is a degeneration of the nerve terminations within the heart. He points out that, if we accept the theory that heart failure is in all instances due to fatty degeneration, we are driven into the absurd position that fatty heart is the essential cause of both a rapid and a slow pulse. In the notes of a case given that had been treated by antitoxin the pulse fell to fifty on the fourth day, and became irregular and gradually sank to thirty-six on the ninth day, when the patient died, an hour before death the pulse only registering twenty. Paralysis appeared on the seventh day, the knee jerk disappearing on the eighth.

St George Reid.

Macgregor, Alexander.—*The Vitality of the Diphtheria Bacillus.* "Lancet," March 12, 1898.

REPORT of the case of a boy, aged eight years, in which the Klebs-Loeffler bacilli were present in a virulent condition nearly six months after the attack of diphtheria. References are given to other publications treating of the length of time in which the diphtheria bacilli have been found in the throat after the clinical symptoms of the disease had disappeared.

St Clair Thomson.

Morse, J. Levett (Boston).—*A Case of Antitoxin Poisoning.* "Boston Med. and Surg. Journ.," Feb. 17, 1898.

A MILD case of diphtheria treated with five hundred units of the Massachusetts State Board of Health antitoxin, injected with all aseptic precautions. In about seven days slight urticaria was noticed, rapidly developing, with glandular swelling, the glands in the groin being as large as walnuts. There was chilliness, vertigo, and fainting, the whole surface of the body becoming covered with large blotches of urticaria, the thighs being deep purple, and the feet enormously swollen. There was almost complete suppression of urine, that passed being very thick, but without albumen. The patient lost ten pounds in weight, and was laid up for a week.

St George Reid.

Rosenthal.—*The Dosage of Diphtheria Antitoxin, and its Method of Using.* "Philadelphia Med. Journ.," April 9, 1898.

THE author begins with 1000 or 2000 immunizing units of antitoxin, gives 2000 to 3000 units at the second dose, and gradually increases the dose in this way as the case goes on. His rule is to administer 2000 units in cases above two years old, and who exhibit any degree of malignancy, the laryngeal or nasal varieties, or where there is lymphatic involvement, and dose gradually increased as above mentioned. He quotes one case in support of his contention.

B. J. Baron.

MOUTH, &c.

Brown, R. Hill—*Parotitis from Obstruction of Stensen's Duct.* "Lancet," April 16, 1898.

A WOMAN consulted the author for inflammation of one parotid gland. She complained of a pricking sensation in the mouth, and examination revealed a small-pointed body projecting from Stensen's duct. When extracted, it proved to be a feather about an inch in length. Its removal was followed by a flow of pus and sero-purulent fluid from the duct, and the pain and swelling rapidly diminished.

StClair Thomson.

Franklin, Melvin (New York).—*Retropharyngeal Abscess ulcerating into the Left Internal Carotid Artery (?), followed by Right-Sided Hemiplegia, with Aphasia, and Recovery.* "Medical News," Feb. 19, 1898.

THE patient, aged seven years, was suffering from simple angina with slight cedema of the posterior wall of the pharynx. On the second day there was sudden profuse hæmorrhage from the nose and mouth: and a pulsating swelling appeared on the left side of the neck. On examination of the interior of the mouth, blood was seen gushing from a point behind the left tonsillar pillar. In order to arrest the bleeding, the pharynx was tightly plugged with a large piece of sponge, by means of a catheter passed through the nose. This had the desired effect.

A few hours later there was asphasia, with paralysis of the right side of the face and right arm; the paralysis rapidly developed, culminating in complete loss of sensibility, and paralysis of the entire right side of the body and complete asphasia. For three days the condition remained about the same, the pulsating tumour in the neck, however, gradually diminishing.

The plug was then removed; this was followed by slight hæmorrhage, which was, however, easily controlled, and the child gradually improved—in a month's time being able to be about, but still unable to walk unaided, or to articulate distinctly.

After twelve months the patient had recovered the power of speech, and only suffered from slight weakness in the right arm and talipes equinovarus.

StGeorge Reid.

Hektoen.—*Carcinoma of the Pharynx with Extensive and Erratic Cornification.* "Philadelphia Med. Journ.," March 19, 1898.

THE case is that of a man, forty-five years old. There was carcinomatous ulcer in the left sinus pyriformis, metastatic growth in the right side of the neck, and in the liver, and the right half of the epiglottis and the adjacent pharyngeal mucous membrane was the seat of irregular ulceration.

Microscopic examination showed extensive cornification of groups of epithelial cells—"cell nests."

B. J. Baron.

Reardon, Timothy (Boston).—*A Unique Case of Œdema of the Superior Surface of the Soft Palate.* "Boston Med. and Surg. Journ.," March 17, 1898.

THE patient, aged twenty-eight, had for some time suffered from pharyngeal catarrh, with expectoration of muco-purulent crusts. Suddenly, one morning at 2 a.m., he was roused by the sensation of a foreign body in the throat, and on looking in the mirror found that the back of the mouth was occupied by a white swelling dependent from the soft palate. When medically examined the fauces were found to be filled up with a pale glistening mass the size of a pigeon's egg,

the line of junction with the soft palate being sharply defined. The uvula was cedematous, and the inferior surface of the palate pale.

An incision evacuated some clear serum, and the mass rapidly disappeared. The author states that the nose and pharynx were healthy, but the vault of the pharynx was covered with muco-purulent secretion. *StGorge Reid.*

NOSE, &c.

Barth (Danzig). -- *Operative Treatment of Empyema of the Frontal Sinus.* "Deutschen Medicinischen Wochenschrift," April 28, 1898. Congress of the German Surgical Society, Berlin, April, 1898.

THE osteoplastic operation (Kusber and Czerny) has overcome most of the disadvantages of the other methods. The drainage into the nose is, however, apt to be blocked, so that many operators do not rely on it. Barth thinks that, if possible, a wider exit should be made. He splits the nasal bone and the nasal process of the frontal bone, and forms a wider communication between the nose and the frontal sinus by removing the ethmoid cells. The wound is sutured after thorough removal of the frontal sinus mucous membrane. The method gives a good cosmetic result, disease of the ethmoid cells is not overlooked, and protection against relapses is obtained. *Guild.*

Guder.—*The Effect of Irritation of the Nasal Mucosa upon the Movements of the Heart and Pulse.* "Ann. des Mal. de l'Oreille," Jan., 1898.

IN view of the numerous reports—many of which are quoted in this paper—of cases in which nasal disease has been associated with affections of the heart's action, cardiac pains, etc., the author has undertaken a number of experiments in order to gain some definite knowledge on the subject. His method has been to take a sphygmographic tracing from the radial artery with Dudgeon's instrument, and then, leaving the arm and instrument in position, to irritate the surface of the turbinates and septum while a second sphygmographic tracing is obtained. A variety of irritants have been used—the probe, galvano-cautery, irritating insufflations, etc.—and the area submitted to irritation has been both limited and extensive. In all forty-three subjects have been tested—thirteen without and thirty with nasal disease—and the experiments have been repeated on several occasions.

The author has been impressed with the importance of this repetition; for the emotional element has a great influence in the variety of tracings obtained. Among the normal cases, where the turbinates and septum have been subjected to irritation, a certain proportion showed some increase in the pulse rate and some changes in the form of the dirotic wave. Slowing of the pulse and cardiac oppression were never observed. Where nasal disease was present a similar result was obtained, about half the cases showing a slight increase of frequency (eight to ten per minute), but nothing which produced subjective palpitation. In only one instance was slowing observed.

The result of the series of experiments is, then, entirely negative; though the author admits that, where a marked neurotic taint is present, some cardiac disturbance may occur from nasal disease.

He sums up as follows:—

1. The research proves that no special relationship exists between the nasal mucosa and the innervation of the heart.
2. The cases of cardiac disturbance dependent on nasal disease which have

been described by various authors, must have occurred in neurotic subjects predisposed to excessive reaction to irritation of any sensory nerve.

3. The sensory nerves of the nasal mucosa possess no special quality with regard to cardiac reflexes.

4. The trigeminal plays no other rôle in respect to these reflexes than that of any sensory nerve whatever submitted to any irritation. One should, however, bear in mind the high degree of sensibility developed in this nerve, as well as the character of the organ which it supplies.

Ernest Waggett.

Kummell (Hamburg).—*The Treatment of Lupus with X Rays and Concentrated Light.* "Deutschen Medicinischen Wochenschrift," April 28, 1898. Congress of the German Surgical Society, Berlin, April, 1898.

THE speaker demonstrated several cases with lupus of the face which had been cured by the X rays. The danger of burning by too strong application of the rays is to be avoided by having the source of light to begin with at least forty centimetres from the skin, and then gradually bringing it nearer. By the first appearance of burning, which is characterized by a yellow tinge in the skin, the treatment must be stopped. The surrounding skin should be protected by tinfoil. Syphilitic ulceration was not influenced by the X rays. Kummell has also obtained good results from the use of concentrated light.

Guild.

Lack, H. Lambert.—*Adenoid Vegetations and Laryngeal Stridor.* "Lancet," March 26, 1898.

IN criticising the above views it is pointed out that the author and Dr. G. A. Sutherland recently² claimed to prove that an affection commonly known as congenital laryngeal stridor depended upon a congenital deformity of the superior laryngeal aperture aided by the flaccidity of the parts in infancy (not in the latter factor alone, as Dr. Smith erroneously interprets the views). If adenoids are the exciting cause of the affection, as Dr. Smith asserts, it is a little surprising that Dr. P. McBride (who examined six cases for Dr. Thomson of Edinburgh) and the writer in some twelve consecutive cases have been unable to find them in a single instance. Dr. Smith's contention is weakened and his bias shown by his statement that he always believed these cases were due to adenoids, but that until this one case came under observation he had no substantial evidence of it. The typical class of cases described by Dr. Thomson, Dr. Sutherland, and the writer form a group *per se*, and must be carefully distinguished, as they pointed out, from cases of laryngeal spasm due to adenoids or other form of nasal obstruction. Many details of Dr. Smith's case, apart from the result of treatment, point to its belonging to the latter class. Thus the stridor ceased under chloroform, was much increased in sleep or by closing the mouth as in feeding, and the patient was subject to severe suffocative attacks, these symptoms being characteristic of the adenoid cases and very rare in the affection Drs. Sutherland and Lack called congenital laryngeal obstruction. Thus Dr. Smith's case in no way controverts their views as to the pathology of the latter affection. Finally, when Dr. Smith states that he believes the affection to be due to spasmodic contraction of the aryepiglottic folds, and that this is due to irritation set up by the adenoids in the naso-pharynx, the writer replies that the spasm in his patient was possibly due to irritation set up by the examiner's finger and laryngeal mirror in the infant's pharynx—a not uncommon reflex.

St. Clair Thomson.

² The "Lancet," Sept. 11th, 1897, p. 653.

Mackenzie, G. Hunter.—*Nasal Polypi: their Diagnosis and Radical Treatment.*

"The Lancet," Feb. 5, 1898.

THE presence of a mucous polypus in the posterior nares is sometimes overlooked if the following method is not adopted. The patient is instructed to close the opposite nostril, and firmly blow down the affected one; the polypus will then be distinctly observed to advance and recede with respiration.

The clinical characters are described. In treatment the forceps are condemned, and the cold snare, galvano-cautery point, and curette are recommended.

Hæmorrhage as a concomitant of mucous polypus of the nose is of bad significance with one exception. The exception is what is known as "bleeding polypus of the nose," a variety which usually affects women, and curiously enough is almost invariably located in the left nostril. It is of the nature of an angioma, and is attached to the anterior part of the septum.

Hemorrhage in a mucous polypus almost invariably indicates a high degree of malignancy, and is one of the earliest and most persistent symptoms. The naked-eye appearances in the early stages in such cases may be very similar to ordinary mucous polypi, or more commonly the growths may be mottled and blood-stained. A characteristic feature of the hæmorrhage is the ease with which it may be induced, as, for instance, by simple and gentle probing. *StClair Thomson.*

Smith, Eustace.—*Adenoid Vegetations and Laryngeal Stridor.* "The Lancet,"

March 19, 1898.

SOME time ago the author expressed the opinion that laryngeal stridor, like many other nervous phenomena in early life, was sometimes due to the irritation of adenoid growths, and might be successfully treated by their removal. At that time he was unable to support this view with substantial evidence, but he is now able to quote an instance in which congenital crowing of a marked type ceased within a few days of the removal of the post-nasal growths.

An infant was admitted to hospital for laryngeal stridor at the age of one month. It was stated that the breathing had been noisy from birth, and that at times the crowing was so loud and the breathing so laboured and distressed as to raise fears for the child's life. The crowing was continuous. At times, however, especially after a meal or during the night, the breathing would become excessively loud and stridulous. In these attacks the face grew livid, the chest-wall was drawn in deeply, and the child showed every mark of suffering from want of air. After a time, varying from twenty minutes to an hour, the dyspnoea gradually subsided and the child returned to his ordinary state—crowing loudly with each breath, but giving no sign of discomfort. Still, even in these intervals of comparatively quiet breathing there was marked recession of the lower ribs and epigastrium, and all the intercostal spaces were drawn in. The stridor was a long-drawn croak, which was loud in inspiration, and less loud, although distinct, when the breath was expelled. It never ceased even during sleep. At times the child coughed, but the cough had no barking laryngeal quality, and the cry was natural and clear. Examination of the chest showed that the respiratory murmur was equal on the two sides. A few scattered rhonchi were noticed. During the suffocative attacks the lividity and distress were so great that it was thought advisable to keep instruments always ready at hand for the operation of tracheotomy. The temperature was normal throughout, and remained quite unaffected by the attacks of dyspnoea. Digital examination of the throat discovered a number of vegetations of small size in the naso-pharynx. No attempt was made at this time to remove the growths, but a two per cent. solution of resorcin was injected into the nostrils twice a day to control any post-nasal catarrh. The crowing, however, was not lessened by

this treatment, although the cough ceased, and after a few weeks the mother was told to remove the child, but to bring him back to the hospital if the symptom did not improve.

Three months later the child was re-admitted to the hospital. His general condition was less satisfactory than before. He was soft and flabby, and was said not to care for his food. The adenoid growths were scraped away under chloroform. While under the anæsthetic it was noted that the crowing ceased and the breathing was perfectly quiet and natural. A few days after the operation the following observation was made of the condition of the larynx :—The epiglottis was sharply folded on itself, so as to bring the posterior lateral surfaces into almost complete apposition. It was pale in colour, and somewhat thicker than usual. Throughout the examination the aryepiglottic folds were held tense. They were thinned and shortened, thus approximating the arytenoid cartilages and narrowing the upper aperture of the larynx. Only a small portion of the posterior ends of the vocal cords were visible ; they were apparently healthy.

No suffocative attacks occurred after the operation, and stridor declined until it only became noticeable on deep inspiration or crying.

In this interesting case the connexion between the respiratory croak and the state of the pharynx hardly admits of doubt. For three months the stridor had persisted day and night without improvement ; indeed, the attacks of acute dyspnoea, instead of growing milder, had become more severe and distressing. Ordinary measures of relief had met with no success. Then the adenoids were removed and a change was apparent at once. The night attacks ceased to occur and the child slept undisturbed. In a few days the croaking had begun to be less noisy ; in a fortnight it could not be heard in ordinary breathing ; in another two days it could not be heard at all, and the child was dismissed as cured. The case was not one of congenital malformation such as has been described by Dr. Lees, for the larynx was of normal size and development. Nor can the croaking be attributed to any laxness or flabbiness of tissue, as suggested by Dr. Sutherland and Dr. Lambert Lack, for Dr. MacIlraith noted that the aryepiglottic folds were held tense during the whole of the laryngoscopic examination. Moreover, the fact that the stridor ceased while the patient was under the influence of the anæsthetic, points very decidedly to spasm as a cause of the croaking. Dr. John Thomson has argued in favour of respiratory spasm being common in these cases, and attributes it to imperfect co-ordination of the respiratory muscles. Dr. G. Smith was inclined at one time to accept Dr. Robertson's explanation that the trouble lay in a posticus paralysis consequent upon a depraved innervation of those muscles from over-stimulation of the accessory nucleus, but the present instance has convinced me that paralysis of muscle is not a necessary element in the derangement. It is quite possible that the mechanism of the noise may be different in different cases. In the subject of this note the stridor is attributed to a spasmodic contraction of the aryepiglottic folds, and it is believed that this was due to irritation set up by the adenoids in the naso-pharynx. The author thinks it probable from this and other examples of the affection which have come under his notice, that adenoid vegetations and the post-nasal catarrh which almost invariably accompanies them may be a cause of many of the cases of congenital croaking, as they are, undoubtedly, of many of the cases of laryngismus stridulus. That the number and size of the adenoids present in any particular case are insignificant ought not, in his judgment, to tell against this view. It is a common observation in the case of older children that the degree of distress and general interference with nutrition caused by the vegetations is often greatly out of all proportion to the actual amount of adenoid hypertrophy. The reason of this he believes to be that the nervous

irritation is not uncommonly the consequence not so much of the growths themselves as of the post-nasal catarrh, which rarely fails to be joined with them sooner or later ; at any rate, by reducing the catarrh he has often succeeded in putting a stop to signs of nervous distress, although the adenoid overgrowth itself was in no way interfered with by the treatment. In the present case, however, treatment of the post-nasal catarrh did not affect the crowing, which only ceased after the post-nasal vegetations had been scraped away.

StClair Thomson.

Taylor.—*A Case of Urticaria of the Pharynx producing Grave Œdema of the Glottis.* "Philadelphia Med. Journ.," April 2, 1898.

THE patient, a young lady, was seized with urgent dyspnoea after dinner, followed very rapidly by urticaria over almost the whole body. Counter irritation by heat to the feet, ice to the neck, a spray of cocaine and antipyrin gave great relief ; also hypodermically strychnia, atropin, and later pilocarpin, and internally stimulants were administered.

B. J. Baron.

LARYNX.

Barnett, J. E. S.—*Case of Spasmodic Dyspnoea.* "The Lancet," April 30, 1898.

THE patient was aged three and a half months, and had suffered from obstructed respiration since soon after birth. Tracheotomy was performed, but the child died cyanosed three weeks afterwards. At the *post-mortem* it was found that the thymus gland was enlarged. It is suggested that this irritated the recurrent laryngeal nerves, setting up spasm, and that this was relieved by the tracheotomy ; but the gland still growing caused direct and fatal pressure on the trachea. There was neither ulceration of the trachea nor papilloma of the larynx.

StClair Thomson.

Garre, Prof. (Rostock).—*Extirpation of Larynx and Œsophagus.* Rostocker Aerzte Verein. "Münchener Med. Woch.," May 3, 1898.

1. THE author showed a man in good health after total excision of the larynx two years before. The specimen showed the larynx and attached muscles, as the growth had infiltrated through the thyroid cartilage.

Jan. 14th, 1896. High tracheotomy was done.

Feb. 10th, 1896. Total extirpation of the larynx.

2. He also showed a case of extirpation of the larynx, with part of the œsophagus. The specimen showed carcinoma of the œsophagus, which had infiltrated into the cricoid cartilage and extended to the arytenoids.

Dec. 6th, 1897. Low tracheotomy, with cocaine.

Dec. 18th. Thyrotomy for diagnosis. Piece of tissue between the arytenoids was removed and showed carcinoma of the œsophagus under an intact mucous membrane.

Jan. 7th, 1898. Total extirpation of larynx, with upper part of œsophagus. Part removed was five centimètres in length and included the whole lumen, except two centimètres of the posterior wall. The incision was carried half a centimètre from the tumour. The trachea was divided close to the cricoid and the upper ring removed. It was then closed by suture. Closure of the œsophagus was not possible. It was stitched to the surrounding soft parts, to be closed later by a plastic operation.

What is the danger of the operation, and what are the chances of recurrence ? Statistics vary greatly. Sendziak has collected one hundred and eighty-eight cases of total extirpation, with a mortality of forty-four per cent. This does not give a

correct idea, as the operation has been improved lately. The greatest danger is from broncho-pneumonia, caused by blood, mucus, or saliva from the pharynx, or pus. The trachea must be carefully protected by isolating its lumen during the operation. Trendelenburg's or Hahn's canula should be used. In my second case, to prevent ingress of secretion I divided the first tracheal ring and sutured the now pliable trachea after freeing the peritracheal tissue. To preserve a clean wound round the trachea careful closure of the pharynx is necessary to prevent the overflow of saliva and mucus. Position of patient (Bardenheuer) is important, so that secretion may flow away from the upper parts of the throat. In the last few years, owing to improved technique, the mortality has decreased. Sixty cases of Bergmann, Mikulicz, and Socin show mortality of twenty per cent. Bergmann's mortality since 1891 is 11·1 per cent. As regards recurrence, Sendziak gives thirty-two per cent; relative cure—*i.e.*, under three years—seven per cent.; definite cure—over three years—5·8 per cent. Out of sixty cases in the last few years I find definite cure in ten per cent. Experience has shown us that not much importance is to be placed on small pieces of tissue removed for diagnosis. Intralaryngeal tumours always appear larger after removal than they do on laryngoscopic examination. When carcinoma is suspected, laryngo-fissure (a comparatively safe procedure) is indicated to allow of direct inspection, or palpation, or removal of a suitable piece of tissue for microscopic examination.

3. In a third case of cancer of the œsophagus, involving the posterior tracheal wall and cricoid cartilage, I was obliged to remove the otherwise healthy larynx. This operation consisted in resection of the œsophagus, five centimètres in length, with extirpation of the larynx and five upper tracheal rings.

History.—Woman, twenty-eight, has had difficulty in swallowing since September, 1897. After being confined in the end of September difficulty increased so that she could hardly swallow anything but fluids; no vomiting, no pain on swallowing, increasing emaciation. An obstruction was felt behind the larynx with the bougie—only the smallest urethral bougie could be passed. On palpation by pushing the larynx aside a slight resistance at the top of the œsophagus could be felt. Only a slightly swollen arytenoid could be seen with the laryngoscope.

Diagnosis.—Hard circular carcinoma of œsophagus.

Jan. 13th, 1898. Œsophagotomy on the left side: a small hard tumour can be felt. Sound No. 6 can be passed. Œsophageal fistula made for nourishment.

Feb. 2nd, 1898. Resection of œsophagus, with extirpation of larynx and five trachea rings. Longitudinal incision on the anterior edge of the sterno-cleido mastoid. Large vessels drawn outwards; œsophagus freed from the vertebræ and separated from the pharynx. In attempting to separate the œsophagus from the trachea and cricoid cartilage it was found that the carcinoma had grown through the posterior tracheal wall for about five centimètres. The trachea had also to be removed. After a low tracheotomy the trachea was divided under the fourth ring, and after submucous removal of the fifth ring it was closed by suture close above the tracheotomy tube. The right lobe of the thyroid gland, which was affected, was also removed. As replacement of the continuity of the trachea with so large a defect is impossible, the larynx will be functionless. It was removed, leaving the mucous membrane in continuity with the epiglottis, which was used for plastic covering of the œsophageal defect. The mucous membrane over the arytenoid was united with the other edge of the resected pharynx, and the sub-glottic mucous membrane with the upper end of the œsophagus. This sac of mucous membrane was anteriorly in the middle line split up to the base of the epiglottis to simplify the wound conditions. The wound was plugged, especially above, to prevent ingress of saliva from the pharynx. The patient endured the

operation well. During the first eight days burrowing of pus in the mediastinum, with rise of temperature, occurred. It convalesced with proper position and frequent change of dressings. The sutures on the plastic laryngeal mucous membrane were torn through on the tenth day. The resulting defect, 2·3 centimètres, was covered with Thiersh's grafts. After eight weeks there was a deep œsophageal channel, almost entirely covered with mucous membrane, which, on March 30th, could be closed as a tube with two small flaps, over which the skin could be sutured. Only a small fistula was left open.

April 4th. Patient swallows well: only a few drops escape by the fistula.

In the specimen which I show is only the bare cartilaginous framework of the larynx; the healthy mucous membrane from the aryepiglottidean ligament to the trachea mucous membrane I preserved, to close by a plastic operation the defect in the œsophagus, which, as far as I know, has not been attempted before. Owing to the unpleasant susceptibility of the transplanted laryngeal mucous membrane (the superior laryngeal nerve was not injured) it was a long time questionable whether this could be used for œsophageal mucous membrane, and if severe coughing would not interfere with nourishment. That was not confirmed. The sound still produces coughing; swallowing is normal.

Œsophagoplasty presents many difficulties in a total cross resection of the œsophagus. Hacker, in one case, formed a posterior œsophageal wall by folding in two lateral flaps. The patient survived a few hours. Paulsen had a favourable result in a similar case (*"Centralblatt für Chir.,"* 1891). Narath, in a resection of four centimètres, managed to make the œsophagus so movable that he could draw it up and suture it to the pharynx by its posterior wall, which resulted in a channel, which was converted into a tube by a second plastic operation, and functionally gave a satisfactory result. Narath describes this as the second œsophagoplasty treated to an end. In my case it was absolutely impossible to draw the œsophagus far enough up to unite it to the pharynx, owing to its want of mobility and the size of the excised part.

As the larynx, after resection of five tracheal rings, and the cricoid cartilage, would doubtless be functionless, I wished to make the attempt to use plastically the laryngeal mucous membrane. This mucous membrane was so vascular and so perfectly preserved, as the final result shows, that it was of the greatest use in the formation of an œsophagus. Somewhat easier is the œsophagoplasty in those cases in which, as in Case 2, a small piece of the posterior wall can be preserved. Here, after a half-channel had been formed by cicatrization, I completed the œsophagoplasty by using skin from the neck, like Hochenegg (*"Wien. Klin. Woch.,"* 1892) and Narath. Two folding flaps were on either side dissected up, turned with the epidermis inwards, and sutured by their edges. Thus two lateral skin flaps formed the covering, which could be pushed on their substratum to the middle. I left the lower corner open, in order to feed with an œsophageal tube. Healing followed in a satisfactory way, but the outlook for a lasting result has been disturbed by the occurrence of a secondary deposit from a gland which has affected the carotid.

Guild.

Harmer, L.—*Case of Primary Cancer of the Epiglottis and its Operative Treatment.* *"Munch. Med. Woch.,"* April 19, 1898.

WHILE cancer of the larynx is common, cancer of the epiglottis is rare. Patient, sixty-five years old, presented a cauliflower-like tumour the size of a hazel nut growing from the edge of the epiglottis and the right aryepiglottidean fold. Operation undertaken with dependent head without previous tracheotomy.

Subhyoid pharyngotomy with excision of tumour and surrounding tissue.

Result was favourable. If after the operation there is obstruction to secretion, the foot of the bed should be raised, as recommended by Bardenheuer, which has a quick and favourable effect on accompanying bronchitis. *Guild.*

Longbotham, George F.—*Plugging of Trachea by a Caseous Gland.* "The Lancet," March 19, 1898.

A BOY, aged eight, was admitted to hospital in a semi-conscious, cyanosed condition, evidently suffering from some obstruction to his respiration. There was no history of foreign body getting into the air passages. Chloroform was administered, giving some relief. Intubation with a catheter did not benefit the symptoms, but evidently indicated some obstruction a considerable way down the windpipe. Tracheotomy was then performed, but before its completion the child had ceased breathing. Aspiration with a long india-rubber tube was then tried, but yielded no good result. A long tube was then passed down for the purpose of irritating the mucous membrane of the trachea and bronchi, whereupon the child gave a deep inspiration, and again ceased breathing. The heart beats were now becoming smaller and much more rapid, but artificial respiration, the galvanic battery, and this catheterization were nevertheless continued. Suddenly some cheesy-looking matter, about half the size of a hazel nut, was coughed up, after which the child began to breathe freely, and made an uninterrupted recovery, although on more than one subsequent occasion a little of this cheesy matter was coughed up. This cheesy matter proved to be part of a caseous bronchial gland, which had evidently ulcerated its way into the trachea, about the bifurcation. *St Clair Thomson.*

ŒSOPHAGUS.

Bayer, Dr.—*Eucaine in Affections of the Œsophagus.* "Therap. Monats.," April, 1898.

IN 1896, eucaine, a new anæsthetic made in the chemical works in Schering, was recommended as a substitute for cocaine by Gaetano Vinci, working under Liebreich in the Berlin Pharmacological Institute. Vinci proved, from animal experiments, that it had the same anæsthetic effects as cocaine, could be sterilized by boiling, was applicable in weaker solutions, and cheaper. Favourable reports, with a few exceptions, immediately followed from ophthalmic surgeons and dentists. The dissentients stated that the irritation of the conjunctiva and the pain on instillation were sufficient to condemn the drug. Sillex, who had been in favour of it, undertook investigation, which showed the discrepancy to be due to inconstancy of action. To prevent this, a new preparation, eucaine B, was introduced. An immediate anæsthetic action, with little irritation or toxicity, was ascribed to this eucaine B. It was promptly introduced into surgery with good results, as Lohmann showed, who, after he gave up the three per cent. solution, performed a series of smaller and larger operations painlessly with a ten per cent. solution. Schleich was satisfied with it in infiltration anæsthesia.

Experiments with eucaine A and B have been made in affections of the cesophagus and rectum in the polyclinic and private practice of Prof. Rosenheim for over a year (at first with A, for the past nine months with B). No essential difference was noticed. I have been allowed to report these. Eucaine was used in a three per cent. solution for cesophagoscopy. After two minutes anæsthesia was sufficient, and lasted long enough for thorough examination or slight treatment, as cauterizing

or extraction of foreign bodies, for which we had previously used ten to twenty per cent. cocaine.

Eucaine is also indicated in certain cases of dysphagia with cancer of the œsophagus, in which the results of bougie examination and œsophagoscopy are inconsistent with the severity of the dysphagia. We saw several cases where a bougie of six millimètres passed easily, while fluids could not be swallowed. This symptom is due to spasm, caused by irritation of food on an abnormally sensitive œsophagus, a supposition which is confirmed, as such patients can swallow after injections of morphia. The effects of morphia injections are often immediate, but frequently they are only to be obtained by ever-increasing doses, which add to the loss of strength by causing loss of appetite. In such cases we had good results from eucaine. We used a three per cent. solution in an ebony syringe constructed by Prof. Rosenheim, which allowed direct application to be made. One patient, who before could not swallow fluids, was able, after an injection, to swallow a beefsteak and potatoes without difficulty. This patient quickly learned to make the injection himself, and never showed toxic symptoms, although he used an injection of two grammes three to four times a day for weeks. In other cases we succeeded, by injections daily, or twice daily, in allaying the spasm, and allowing solid food to be enjoyed.

Guild.

Beuthen, Herrman.—*Œsophagotomy for a Foreign Body.* "Munch. Med. Woch.," April 19, 1898.

AN idiot, twenty-nine, swallowed the lower part of a pipe made of horn. It was 6.5 cm. long, 4 cm. broad, 1.8 cm. thick. Removal from above, as well as insertion of an œsophageal bougie, failed. Œsophagotomy was, therefore, done on the left side. The foreign body had got impacted 4 cm. beneath the edge of the sternum, and was removed. Rectal feeding for two days. He was dismissed cured in a month.

Guild.

THYROID.

Sutcliffe, E. Harvey.—*An Extraordinarily Acute Case of Graves's Disease.* "Lancet," March 12, 1898.

IN this case the disease ran an unusually rapid course, as the patient lived just three months after the symptoms first made themselves apparent. The most important and obstinate symptom was vomiting and distressing retching at even the sight of food.

StClair Thomson.

E A R.

Bezold, Prof. (Munich).—*The Position of the Consonants in the Tone Series.* "Arch. of Otol.," Oct., 1897.

THE consonants most frequently extinguished in deaf mutes are M, N, L, and K. Their proper tones are very low-pitched, and the lower part of the scale as tested with the continuous tone range is the part most frequently lost in the subjects of deaf-mutism. In a case in which, on the other hand, the defect was confined to the upper half of the range, the only consonants heard (apart from P, T, and R, which are rarely lost) were L and N. K may be heard if the loss of the lower half

range does not extend above e^2 (according to Wolf its tone-limits are d^2 and d^3). The consonant F lies between $f^{\sharp 1}$ and g^{\sharp} , S between e and Galton 3.5, Sh between $c^{\sharp 4}$ and e^5 . P, T, and R are almost invariably heard by deaf mutes.

Dundas Grant.

Bronner, Adolph.—*Extradural Cerebral Abscess of Aural Origin with Thrombosis of the Lateral Sinus, in which the Sinus was not opened; Operation; Recovery.* "Lancet," April 2, 1898.

WHEN seen the patient was partially comatose. The neck was slightly stiff on the affected side. The temperature was 101° F., and the pulse was 65. The optic discs were congested. The mastoid antrum was opened and was found to be only slightly diseased. The attic, however, was full of granulation and foetid pus. The basilar groove was laid open with the chisel, and a fair quantity of pus escaped. This, however, was not very offensive. The dura mater was grey and thickened. The lateral sinus was hard and evidently thrombosed. As there were no urgent symptoms and the thrombus was possibly non-septic, it was not punctured or opened. On the third day the pulse and temperature were nearly normal, and on the fifth day the outer wound was closed and the parts dressed through the external meatus. The patient made an uninterrupted recovery.

This case seems to be interesting from several points of view. The gravity of the symptoms pointed to some serious intracranial lesion, apparently to cerebral abscess. There can be no doubt that there was thrombosis of the lateral sinus, and during the operation the question naturally arose whether one should explore and if necessary open up the sinus. It is customary to explore the sinus whenever it has been exposed, but this procedure seems to be contrary to the most elementary rules of surgery. No surgeon would think lightly of exploring a vein which was surrounded by septic material in any other part of the body. It certainly is a remarkable fact that the healthy lateral sinus is so frequently opened in these cases and without many fatal or even bad results. It was impossible in this case to know if the thrombus was septic or not, and he therefore abstained from exploring it. Had he known it to be septic he would not have opened it up unless there had been any signs of septic poisoning or of pyæmia. If any of these symptoms had been present he would have first tied the jugular vein and then removed the thrombus and the diseased walls of the sinus as far as possible. The outer wound was left open for several days, so that the parts and symptoms could be carefully watched, and so that any further operative interference could, if necessary, have been readily carried out.

StClair Thomson.

Guttman, J. (New York).—*A Case of Bezold Mastoiditis with Extension to the Posterior Part of the Neck.* "Arch. of Otol.," February, 1898.

THE patient was the subject of chronic suppuration of the left ear of eight years' duration. Three weeks before the present attack he got a severe cold, and the otorrhea had become more profuse, and a swelling extending along the side of the neck developed behind his left ear. The narrator recognized this as a case of Bezold's mastoiditis, and got consent to operate. The antrum was very small, filled with granulation tissue, and only reached after chiselling fifteen millimètres through intensely hard bone. The cells were then opened down to the tip of the mastoid, where the spaces were much larger, and on perforating the inner wall the operator evacuated a collection of pus. The probe could be passed through this opening into a large abscess cavity, into which a counter opening was made, and packing with gauze was effected. The patient was discharged from the hospital two weeks after the operation, but three days later a phlegmon formed in the right hand, which required a local operation, but rapidly got well.

The writer draws attention to Knapp's enumeration of the outlets which inflammatory products in the mastoid may make for themselves: (a) On the mesial side of the tip extending down the neck along the sterno-cleido mastoid muscle; (b) through the posterior wall of the external auditory meatus, discharging through a fistula into that canal or into the tympanum; (c) into the cranial cavity, producing extradural abscess, thrombosis of the sinus, or abscess of the cerebrum or cerebellum. The writer insists on the necessity of performing the typical mastoid operation in these cases, and not merely opening the abscess in its lower part.

Dundas Grant.

Jollye, F. W.—*A Case of Internal Ear Deafness following Mumps treated with Pilocarpin: Recovery.* "Arch. of Otol.," Feb., 1898.

THE patient was a girl aged thirteen and a half years, who, when just convalescent from mumps, was attacked with giddiness, after getting out of bed in the morning, with such severity as to cause her to fall down. She had no feeling of nausea, and did not complain of earache or deafness, but was found to be unable to hear the watch close to the right ear, or to hear the tuning-fork by air or bone conduction. For a few days she was treated with hot fomentations, counter-irritation, and bromide and antipyrin, calomel purge and "Politizerization." For a few weeks the giddiness improved very slightly, but the deafness remained absolute on the right side. It was then determined to try subcutaneous injections of pilocarpin, beginning with one twenty-fourth of a grain, and gradually increasing daily till after twelve days she was having one-fifth of a grain. This dose was continued every day for another week, when, for the first time, the watch was audible on the mastoid, and the patient was able to stand alone, although afraid to walk. For a fortnight she took a mixture containing one-third of a grain of sulphate of quinine, with a quarter of a grain of nitrate of pilocarpin, three times a day. Distinct improvement in her hearing then took place. The pilocarpin was left off, and the quinine continued for another six weeks. At the end of this time she could hear the watch two or three inches away from the ear, and was able to walk round the room with very little difficulty.

A few months later she could go out alone, and when she was examined again in a year and a half the hearing was found to be perfect on both sides.

Dundas Grant.

Low, Harold.—*A Case of Scarlet Fever complicated with Acute Suppurative Otitis Media and Acute Hemorrhagic Septicæmia treated by Antistreptococcic Serum; Recovery.* "Lancet," March 19, 1898.

A GIRL, aged six, was seized with scarlatina. On the fourth day of the rash, pain in the left ear was complained of, and the next day there was some discharge from the ear. Three days afterwards the mastoid antrum was opened by Mr. Ballance in the usual way, and pus welled out at the first touch of the gouge. The tympanic cavity itself was carefully avoided. A drainage tube was inserted, and the wound was closed. The temperature fell one degree, but two days afterwards the child vomited, and was lethargic and drowsy. Four days after the opening of the antrum Mr. Ballance saw the patient, and agreed that her condition was due to general septicæmic infection, and not to localized intracranial inflammation. Treatment by antistreptococcic serum was therefore instituted. Although in a very grave condition at one time, the patient recovered. Convalescence was interrupted by an attack of purpura. The discharge from both ears ceased. [No report of condition of membranæ.—*Rep.*]

Broth cultures of the patient's blood showed the presence of virulent streptococci.

The following remarks are added by Mr. Ballance :—"This case shows what can be done by perseverance and unremitting attention. The opening of the mastoid antrum was undertaken with the view not only of relieving pain, and of giving unhindered exit to pent-up pus, but also in the hope of saving the delicate structures of the tympanum from complete destruction. On May 23rd the child's condition was exceedingly grave. The absence of paresis, optic neuritis, and cerebral vomiting, negated the presence of localized or diffused intracranial inflammation. Moreover, the general septic condition did not seem to depend on infection from the temporal bone, which a suitably planned operation on the lateral sinus and jugular vein might arrest. The high fever, rapid pulse, rapid respiration, jaundice, drowsiness, incontinence of urine, distension of the abdomen, foetid diarrhoea, and later the hæmorrhages, made for the diagnosis of general acute scarlatinal septicæmia. The child would certainly have died if anti-streptococcic serum had not been employed, and the injections continued even when life was ebbing away. The serum steadied the temperature, improved the pulse and respiration, cleared the mind, moistened the tongue, and postponed the fatal issue of the acute stage of the illness which was imminent. In acute septic infection every effort should be made to tide over the acute stage, for the prognosis of chronic septicæmia and pyæmia is good. The hæmorrhages had nothing to do with the serum treatment, but were due to blood changes arising out of the acute septic process. The hæmorrhagic condition was treated by chloride of calcium, and with fresh milk and fruit ; in fact, in the manner which yields the best results in scurvy and scurvy rickets."

St Clair Thomson.

Ludewig (Hamburg).—*Surgical Treatment of Chronic Otorrhœa.* "Deutschen Medicinischen Wochenschrift," April 28, 1898. Congress of the German Surgical Society, Berlin, April, 1898.

LUDEWIG recommends the extraction of malleus and incus for the cure of chronic middle ear suppuration rather than the usual treatment by extensive opening of the tympanic cavity from the meatus. It is only contra-indicated in caries of the temporal bone with cholesteatomata. He recommends it especially to overcome the effects of old suppuration, where the fibres of the auditory nerve are atrophied by the pressure of indrawn fixed ossicles. He reports the results of the first hundred out of two hundred and fifty extractions which have been long enough under observation. Cure was obtained in eighty cases ; failure in eight ; the rest are unknown. Hearing was considerably improved in seventy-five. *Guild.*

Whiting, F. (New York).—*A Contribution to the Symptomatology and Treatment of Pyæmic Sinus Thrombosis, based upon Three Successfully Operated Cases.* "Arch. of Otol.," Feb., 1898.

THE writer gives a short history of the development of knowledge with regard to the treatment of pyæmic thrombosis of the lateral sinus, derived particularly from the compendious works of Hessler and Körner on the subject. He describes the various factors in the etiology, pathology, and diagnosis. He discusses the question of when to operate, quoting the two apparently contradictory views of Körner and Hessler: the former advising operation as soon as the diagnosis of sinus thrombosis has been made ; the latter stating that "when puncturing the sinus with an aspirating needle shows that a simple clot is present, operation is not indicated, but repeated daily punctures should be made, and the contents of the aspirating needle carefully examined microscopically for pus and micro-organisms. The failure to find these is to be accepted as proof that the clot is benign and will undergo constructive organization, while the discovery of bacteria in the contents of the aspirator is indication for operation." Thus he deprecates

undue haste in opening the sinus. It need hardly be said that the writer inclines to the former view. The histories of three successful cases are given in considerable detail. In one, he was disposed to think that the immediate cause of the thrombosis was the curetting of granulations in the tympanum. In the same case visible and tangible pulsation of the sinus walls was present, in spite of the fact that the lumen was firmly distended with clot. Pulsation is therefore no proof that the sinus is healthy. Another case afforded an illustration of the value of Gerhardt's sign, namely, a decided increase in the amount of blood passing through the external jugular vein of the unaffected side. In two of the cases there was severe vomiting, in spite of the fact that there was no meningitis.

The indications for ligature of the jugular vein in thrombosis of the sigmoid sinus are summarized by the writer as follows:—

“*First.*—The indications which justify an operator in tying the jugular before exposing the sinus should be very decided and as follows:—A. The existence of chronic otorrhoea. B. Pronounced manifestations of pyo-septicæmia, high fever, sudden remissions, and repeated rigors. C. Metastases. D. Griesinger's symptom, occipital œdema. E. Edema of eyelids of corresponding side. F. Tenderness along the course of the jugular in the neck, and perhaps the cord-like feeling of the infected vein. G. Beginning neuro-retinitis. A majority of these symptoms should be present.

“*Second.*—The indications for ligature after exposing the sinus and recognizing the thrombosis, but before opening it:—A. The presence of a clot extending well down into the bulb, and disintegrated in its lower portion (as indicated by aspirator), associated with distinct pyæmic symptoms, although metastases are absent. B. The display by the sinus of respiratory movements would render probable the admission of aerial embolism to the heart unless the vein were first tied.

“*Third.*—Indications for ligation after exposing and opening the sinus:—A. The presence of a large thrombus, extending down into the bulb, and having undergone purulent liquefaction in the deep bulbous portion, which may not have been diagnosed until the sinus was extensively opened; the curetting deeply in the neck under such conditions is fraught with imminent risk to the patient unless the vein is tied. B. Inability to re-establish the circulation from below, whether the clot has or has not disintegrated, and whether or not there has been tenderness in the neck. C. Inability to re-establish the circulation from either direction has aroused some discussion as to the advisability of ligating both jugulars.”

Dundas Grant.

Zwaardemaker (Utrecht).—*An Initial Symptom of Sclerosis.* “Arch. of Otol.,” Oct., 1897.

THIS is a displacement of the upper tone-limit upwards to the extent of one, two, or more half-tones beyond the normal. It may remain stationary for some years and gradually contract again or become displaced downwards. This is, of course, accompanied by a raising of the lower tone-limit, and there is, as it were, a dislocation upwards of the whole range of hearing.

Dundas Grant.

REVIEWS.

Bussenius and Cossmann.—*Das Tuberculin TR. Seine Wirkung und seine Stellung in der Therapie der inneren und Aussenen Tuberculose.*

THIS is a stout pamphlet of one hundred and thirty-nine pages, written with commendable clearness and precision, and presenting the results of an investigation undertaken and prosecuted in a dispassionate and cautious spirit. It begins with a brief history of the tuberculin treatment from the disastrous commencement in 1890 to the present day. Particular stress is laid upon the progress that has been made since 1890 in our view of tubercular lesions—more particularly of pulmonary tubercle. The authors show that Koch himself is much more alive to the difficulties surrounding the treatment of phthisis, and much more distinct and stringent in excluding those cases that have gone on to a state of mixed infection than he was to begin with. This section is short, but its very brevity emphasizes its statements, and must bring conviction to those who still require it as to the deplorably limited character of the field in which any possible therapeutics of pulmonary phthisis on these lines can work. A brief account of the preparation and immediate effects of tuberculin TR is followed by a detailed account of the authors' cases—thirty-four in number—chiefly of lupus and pulmonary tubercle. The conclusions are as follows :—1. In no cases can we encourage patients with the hope of a certain cure. Carefully gone about, however, the treatment is attended with no danger. 2. It can be recommended in all cases of lupus, in glandular scrofula, in the initial stages of pulmonary tubercle where yet there is no fever, and in lenticular ulcers of the larynx. 3. In pulmonary cases without fever, when there is a cavity or extensive alteration, we need only try it at the urgent request of the patient. 4. In phthisis, with fever, we should have nothing to do with it; but if the sputum shows the presence of mixed infection, and if under the other methods of treatment the fever disappears, we can rank the case under heads 2 and 3.

A. M. Stalker.

Moullin.—*The Treatment of Sarcoma and Carcinoma by Injections of Mixed Toxins.* By C. MANSELL MOULLIN, M.D., F.R.C.S. London: John Bale, Son, & Danielsson. 1898. Pp. 66.

MALIGNANT tumours beyond the reach of operation are so distressing that any method of treatment offering a real chance of success, however slight, deserves consideration. Mr. Mansell Moullin carefully reviews the results of treatment by means of Coley's fluid, and his little book will doubtless be welcomed, especially by those who are thinking of trying this last resource in cases of their own.

The Johns Hopkins Hospital Reports.—*Report in Gynecology.* Vol. VII. Nos. 1 and 2.

THE first paper in the present volume of this excellent series of reports is an interesting review by Dr. J. G. Clark of seventeen hundred cases

of abdominal section from the point of view of drainage. An exhaustive account is given of the structure and functions of the peritoneum, and also of its power of absorbing fluid and solid materials. The author is a strong advocate for discarding drainage on account of its many disadvantages and dangers, such as infection along the course of the tube, interference with primary union, fæcal fistula, etc. The indications for drainage, and the methods to be employed, are clearly defined. The paper will well repay a most careful study by all who are interested in abdominal surgery. The second paper, by Dr. J. E. Stokes, gives a careful account of true vaginal cysts, as opposed to those which have their origin outside the vagina.

OTOLOGY DURING 1897.

WE learn that Dr. H. A. ALDERTON, of Brooklyn, New York, proposes issuing, in the immediate future, a work on otology, entitled, "Review of the Work in Otology during 1897," which will consist of a thorough *résumé* of all work. Opinions that differ will be placed side by side. All that is new is to be quoted *in extenso*. It is only to be hoped that the editor will see his way to include rhinology and laryngology, even if it was by arrangement with one of the annuals of general medicine.

In consequence of the extent of the work, promises of support of 5 dollars (£1) are asked for. We wish the editor all success. Promises of subscription to be sent to Dr. H. A. ALDERTON, 138, Clinton Street, Brooklyn, New York.

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**PRIMARY EPITHELIOMA OF THE ANTRUM OF
HIGHMORE,**

With History of a Case, and Two Camera-Lucida Drawings.¹

By WENDELL C. PHILLIPS, M.D.,

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Hospital of Brooklyn.

TUMOURS of the superior maxillary bone have attracted the observation and taxed the skill of surgeons for many years. In the earlier years all tumours in this region were supposed to have their origin in the antrum of Highmore—even those which we now know to be primarily located in the ethmoidal or sphenoidal cells, as well as in other adjacent regions and tissues.

Primary sarcoma of the antrum, while not frequent, is sufficiently common, so that every observer will occasionally see cases. It would seem that the earlier observers did not carefully differentiate between sarcoma and epithelioma, and quite frequently, where the diagnosis made was epithelioma, the actual report more nearly described sarcoma.

A careful research of the literature on this subject has brought to light a few more or less authentic cases of primary epithelioma of the antrum which have been reported in detail. Short abstracts of these cases will be made a part of this paper.

So good an authority as Heath (1) ("Diseases of the Jaw") states that "the only form of true cancer invading the upper jaw is, in my experience, the medullary or encephaloid; but scirrhus has occasionally

¹ Read before American Laryngological, Rhinological, and Otolaryngological Society, at the Fourth Annual Meeting, May 11th, 1898, held at Pittsburg, Pa.

been met with, of which preparation 1059 E, in the College of Surgeons' Museum, removed by Mr. Coates, of Salisbury, is believed to be a specimen. In the majority of cases the disease begins in the antrum, for the protruding masses which are found in the nose or mouth are but secondary to a formation within that cavity. Medullary disease of the jaw closely resembles the same disease in other parts of the body. Rapidity of growth, with softness and a tendency to fungate on the part of the tumour itself, are the main characteristics."

The tumours described and the cuts shown in his book would seem, in nearly all cases, to indicate sarcoma rather than epithelioma.

A thesis by Morel (2) ("Contribution à l'Etude des Epithéliomas du Maxillaire Supérieure, et en Particulier de l'Epithélioma Térébrant") states that epitheliomata may originate under the periosteum or in the spongy portion of the maxillary bone; in the latter case, either in the substance of the bone itself (central or intraosseous epithelioma), or in the alveolar portion.

"Epitheliomata may also originate in the antrum, either taking their start in the epithelial layer covering the mucosa or in that lining the glands."

The writer makes these as general statements, but cites no cases in support thereof.

He next discusses the boring or penetrating form ("térébrant") of epithelioma of the superior maxilla, and gives details of a few cases. But he says that no autopsy was made in any one of these cases, and *it is therefore impossible to say with certainty whether the morbid growth originated in the antrum—primary epithelioma of the antrum—or not.*

He adopts the theory of Verneuil, for lack of a better, as the most probable hypothesis on which to account for the origin of "épithélioma térébrant" of the superior maxilla. According to this theory, these growths originate in the cysts which are frequently seen at the roots of the teeth—cysts which are developed from epithelial *débris*, the remains of developmental processes.

This thesis contains only general statements as to the essential point sought for. The author quotes what others have said as to primary epitheliomata of the antrum, but cites no cases of indubitable primary epithelioma of this region.

Lawson (3) (*Epitheliomatous Tumour of the Upper Maxilla*, treated by excision of the disease and the application of escharotics) reports a case, some of the characteristics of which would seem to indicate epithelioma; but as no microscopic examination was made, the case cannot be considered authentic. A few details, however, will be given.

Male, sixty-five. For two months severe toothache in left upper jaw. No relief from extraction of teeth, after which a swelling appeared in the mouth above the alveolus. When admitted, there was a soft elastic tumour, about the size of a small egg, and evidently growing from within the antrum. The bone over it had been partially absorbed. Could blow clearly through the left nostril. There was no displacement of the eye. There was a small, soft tumour, about the size of half a walnut, in the mouth above the alveolus. Incision into the latter evacuated some pus,

blood, and soft, broken-down tissue, and revealed an opening through which the finger entered into the antrum, which was found to be completely occupied by a soft tumour. The growth was excised, actual cautery applied, and then chloride of zinc paste. Twice recurrence was checked by hot iron and chloride of zinc paste, and in a little over three months patient was discharged cured. Four months later there was no sign of recurrence.

Reclus (4, 5) (*Epithelioma of Maxillary Sinus—Epithelioma Térébrant*) reports two cases of epithelioma of the maxillary sinus, and speaks of them as “epithelioma térébrant.” Both cases evidently occurred in the service of Verneuil.

Case 1.—Male, sixty-nine years, good general health. Consulted M. Verneuil in regard to an *Ulcer of the Left Alveolar Process*. Had had dental neuralgia ever since fourteen years of age; the teeth had by degrees become carious, yet those in the lower jaw were in good condition. It was decided to extract the roots of the molars. The extraction was followed by a severe hæmorrhage, but a discharge continued many days, which by degrees became purulent. Three months later he presented himself for our observation. We found that the lesions were confined to the upper maxilla; again, the bone is not invaded—at least, in appearance. With regard to the large molars, we know that since the extraction of the roots hæmorrhages have occurred, with a discharge of purulent matter. The border of the alveolus is destroyed at that point; also the fungous ulceration. This ulcer occupies strictly the position of the three large left molar teeth. It is longest antero-posterior, 45 mm. by 10 to 12 mm. transversely. It is excavated in its centre, but at first there was not a suspicion of an orifice. A fistulous opening was found after some search, which led into the antrum. The probe moved freely about in this cavity, and no denuded bone was discovered. But there was an irregular fungoid maxillary membrane. There was no external deformity—at least, there was no abnormal protrusion. There was nothing special about the wall of the nasal fossa, the turbinates being normal, and the patient had never been conscious of pus discharges from the nose; but the discharge from the mouth is nearly continuous, consisting of pus, sometimes discoloured by blood and fetid *débris*, which was examined microscopically by Dr. Nepven, who recognized clearly the characteristic epithelial bodies.

M. Verneuil thought of a radical operation—the removal of the superior maxilla—but a glandular mass about the carotid vessels caused him to abandon this project.

Case 2.—*Epithelioma of the Antrum*, marked by intense pain, with a fistulous opening through the alveolar border, escape of bloody fluid and pus. Multiple operations, recurrence, and death.

Female, fifty-nine years. Has always had bad teeth, which have been extracted one by one from the upper jaw. A dental plate induced an irritation of the alveolar process. Nevertheless, in spite of the pain, the patient wore it until three months before her entrance into the hospital, when she was seized with a violent pain in the left upper jaw, which radiated to the orbit and the auditory canal. About this time the patient

noticed an abnormal swelling at the alveolar border of the superior maxilla, and there was also a narrow orifice with a border of fungous granulations. Verneuil diagnosed necrosis of the alveolar border, and enlarged the opening for the purpose of finding and removing the sequestrum; but instead of this his finger entered a cavity lined with fleshy granulations, which were removed with a blunt instrument. M. Longuet examined them histologically, and pronounced them papillary epithelioma. M. Nepven examined a recurrent granulation, and pronounced it the same.

This operation made no difference in the progress of the tumour—a constant fetid, bloody discharge into the mouth, always of a repulsive odour, and the red soft vegetations developing about the orifice of the fistula. Pain was very severe, radiating to the eye and ear. Verneuil repeated his first operation and curetted away the fleshy granulations, and renounced his former opinion that this cavity was other than the maxillary sinus. Later, Verneuil removed a large part of the maxillæ, but was unable to remove the tumour completely. During the following day she complained of severe pain in the pharynx and dysphagia, and finally died.

Reclus also suggests the name “*épithélioma térébrant*,” on account of its burrowing its way from the alveolar process into the antrum, but without widening the bone or distending the antrum. He suggests, or possibly Verneuil suggests, that the growth has its origin in one of the cysts which are so frequently attached to the roots of the teeth, and which are probably derived from epithelial débris.

Englisch (6), (*Epithelial Carcinoma in Left Antrum Highmori; Cure*).

M. K., female, married, aged thirty-four. Patient was operated on in September, 1878, because of formation of cysts in the left antrum Highmori. Noticed a short time thereafter that the left cheek began to swell and that it was impossible to draw in air through the left nostril. Later, the left eye began to tear profusely and the swelling increased rapidly.

Status Præsens.—Patient well nourished; feverish. The left side of the face in the region of the nose and zygomatic arch, greatly swollen. Directly beneath the zygomatic arch there is an ulcerating surface, about the size of a kreutzer, uneven and covered with crusts. In the centre of the ulcerating surface there is a small opening, through which the superior maxilla can be reached with a sound. The left nasal cavity is filled with granulating masses. No teeth on the left superior maxilla. From the alveoli of the left molar teeth there is an entrance into the antrum through which granulating tissue proliferates.

April 19th. Operation was performed without narcosis, after the patient had recovered from an attack of facial erysipelas. The soft tissues of the cheek were divided by an incision from the centre of the zygoma toward the left corner of the mouth. The ulcerating area was surrounded by two oval incisions, and the flaps formed by this procedure were dissected away from the underlying tissues and thrown back; this made the antrum easy of access. After the tumour was peeled out with

the aid of an elevator, the mucous membranes of the nose, cheek, and the tear ducts, into which the growth had also proliferated, were curetted with a sharp spoon, and all the diseased tissue thoroughly removed. The bone itself was intact. The antrum was tamponned with "charpie hémostatique," the cheek flaps united by sutures, and the wound covered with cotton, saturated with two per cent. carbolic acid solution. The microscope confirmed the diagnosis.

April 22nd. Chill ; left eyelid swollen.

April 23rd. Beginning of an attack of erysipelas.

May 1st. Erysipelas disappeared, but region of lower jaw began to swell.

May 6th. The swelling fluctuated and was incised—a large quantity of pus with necrotic tissue from the fascia of the neck removed. Patient recovered gradually and left hospital June 9th, 1879.

Butlin's case (7) (*Squamous Epithelioma of Upper Jaw*) was a male sixty-two years of age. Had had pain in right cheek and upper alveolar process for several months. A small opening was found in the situation of the alveolus of the second molar, from which there was a foul discharge. A sinus led into the antrum, which was filled with pus, and what appeared to be firm granulation tissue, which a month later was found to be epithelioma. Upper jaw removed, but patient died five days later from exhaustion. Shortly after the first examination of this case a puffy swelling appeared in the tissues between the malar bone and nose, immediately below the orbit. He says : "In spite of the absence of the ordinary signs of tumour of the antrum, the jaw was entirely destroyed with the exception of a part of the alveolar process. The disease extended through the lower wall of the orbit to the eye, into the sphenomaxillary fossa, and up between the temporal and masseter muscles and beneath the temporal aponeurosis. Sections made from different portions of the tumour showed everywhere the structure of squamous epithelioma, containing many cell nests."

There seems to be some doubt as to whether this growth was primarily in the antrum, but the initial symptoms of pain in the alveolar regions would point strongly to such origin.

Ziegler's case (8) (*Cancer of the Antrum*) presents some data pointing to true epithelioma, but as no microscopical report is given and he simply describes it as cancer of the antrum, it cannot, with any degree of certainty, be cited as a case of primary epithelioma of the antrum. The case is similar to several described by Heath and Ziegler.

The patient was a male aged forty-eight years ; has complained of toothache for three months, which was not relieved by extraction of a decayed molar. A probe being passed into the antrum, there was a discharge of pus from the nostril. In a month a small body, apparently composed of granulations, projected from the socket of the extracted tooth. Shortly after the remaining teeth on that side became loose and dropped out, and the sockets were found to be occupied by a continuation of this granulation mass, which grew rapidly and soon filled his mouth to such an extent that it was only with difficulty that he was able to bring his lips together.

A month later an opening occurred through the cheek, surrounded by large fungous granulations; eye protruded, and cheek was greatly swollen: lips wide apart. He became comatose and died about a month later.

Trelat's case (9) (*Epithélioma du Sinus Maxillaire*). Female, aged sixty-two years, noticed about June, 1881, a slight swelling of the left cheek, just below the eye, with some redness and pain. The skin in the vicinity of the lower lid was slightly œdematous, and somewhat adherent to the tumour. The eye did not seem to be displaced, and vision was not affected. The pain increased rapidly. Exploratory puncture obtained a moderate amount of blood, but no pus. It left a fistulous opening, through which a probe penetrated to a depth of five centimètres into a soft tissue, which was removed piecemeal by instruments. The diagnosis epithelioma of the antrum was made, and the diagnosis proved to be correct.

There seems to be considerable doubt as to whether this case was primarily one of the antrum, and the report does not distinctly say that a microscopical examination was made.

Bardeleben (10) (*Carcinoma Maxillæ Superioris Sinistræ; Extirpatio Maxillæ Sup. Sin. et Resectio Partialis in. Dextræ*) reports at length a case as follows:—

Male, fifty-seven years. Five months previously had noticed a painful swelling in the left upper jaw, which grew rapidly. When he came under observation the left upper jaw was occupied by a bulbous and very soft growth. The eye was protruding, the teeth of the upper jaw were absent, the alveolar process was spongy, and the neoplasm occupied the hard palate beyond the median line and also the lateral walls of the throat. Patient complained of severe pain. General health good.

Dieffenbach's operation was performed. Microscopical examination showed the tumour to be carcinomatous; recurrence in six months.

The rapid growth, the extension of the disease, as shown in the full report of this case, would incline one strongly to the opinion that it was one of sarcoma rather than carcinoma, although the microscopical report is that of carcinoma.

Robbins's case (11) (*Carcinoma of the Antrum*), while reported as one of carcinoma of the antrum, would indicate from the history that the disease began in the tissues adjacent to the antrum. There is no history of an opening through the alveolar process, and his statement that it appeared on the left cheek, soon involving and destroying the nose, encroaching upon the fauces to such an extent as to render deglutition difficult, as well as respiration, bears out this impression.

Verneuil (12) (*Epithélioma of the Left Max. Sinus*) reports a case of a woman, fifty-nine years of age, presenting a tumour of the antrum as large as a hen's egg, the growth of which dated from an attack of erysipelas some time previously. The growth occluded the nostril and distended the left cheek. The submaxillary and cervical glands were not enlarged. The patient was cachectic and had renal disease.

In this case, Verneuil used the thermo-cautery for the first time. The anterior wall of the sinus was found to be completely destroyed.

The epithelioma occupied chiefly the anterior wall, and Verneuil thinks may have originated at the root of the molar, which protruded into the sinus, and was greatly changed.

The patient regained her strength, and suspicious granulations have since then been touched with chromic acid. He does not record any microscopical report.

De Gaetano (13) (*A Case of Epithelioma of the Antrum of Highmore*). The patient was a countryman of sixty years of age with a good family history : no syphilis. Disease began in the left zygomatic region in June, 1891, and gradually increased. When seen, the left half of the face was slightly swollen ; ulcer in the internal angle of the eye discharging pus mixed with blood. This ulcer communicated with antrum of Highmore. There was another ulcer discharging in the mouth. A piece of this latter ulcer was subjected to microscopical examination. It was fixed in Müller's fluid, etc. (The author gives details as to staining of cut sections.) The histological character of the removed tissue was that of a typical epithelioma. There was connective tissue of embryonal type, multiple infiltration of epithelial cells—some irregularly disposed, others united in groups of various sizes. In some of these groups the epithelial elements were rounded and regularly placed ; in others, while the external cells had a cylindrical form, the internal ones were concentrically arranged, and on account of the pressure produced by the great number of the newly formed elements, were crushed and flattened. There was a central mass of detritus formed by the degeneration of the cells in the centre of the nest. The condition of the vessels explained the epistaxis from which the patient had suffered. This is considered by Cornil and Ranvier as one of the principal symptoms of epithelioma of the antrum. The mucous glands were also affected by the epitheliomatous process, the lumen thereof being full of newly formed epithelial cells. This seems to me of great importance, since it is generally admitted that epitheliomata of this region originate in these glands, subsequently attacking the surrounding tissue. My observation confirms this opinion—at least, in part. To prove it conclusively I should have seen at least one gland in the beginning of this process at the moment when the epithelial hypergenesis began. That I did not do this is probably due to the smallness of the section. I cannot admit that the process began in the superior maxilla, because Malassez and Anché have shown that primitive epithelioma of the bone does not exist, and this view is confirmed by Hannover and Thiersch. Thus, this neoplasm originated in the mucous glands, thence spread to the neighbouring tissues, then invaded the maxillary bone, destroying its structure by a process of *osteitis rareficiens*, then opening to the internal angle of the eye with superficial ulceration of the skin, and opening also near the last molars, with ulceration of the oral mucous membrane. No operation was performed, since the submaxillary glands were already infiltrated with metastatic deposits and the orbit was very probably invaded by the neoplasm. The last clinical examination confirmed the diagnosis made five or six months before and recorded above.

Fink (14) (*Ueber Maligne Transformation Gutartiger Geschwülste der Highmorshöhle*) refers to several authors concerning the change of a benign to a malignant tumour, and then reports the case of a man, thirty-three years of age, who had had nasal obstruction since early youth, and when twelve years old was found to have nasal polypi. Obtained only temporary relief from their removal at the hands of two surgeons, and when about twenty years old Esmarch diagnosed a polypoid growth of the antrum, and advised the free opening of the cavity and the radical cure of the condition. This was declined. When seen by Fink there was a marked protrusion of the right upper jaw. After about three years of increasing swelling and pain, and repeated removals of the polypi, he consented to removal of the jaw, and the growth was found to be carcinomatous. Death six weeks later from heart failure.

Dunn's case (15) (*A Case of Carcinoma of the Antrum of Highmore; Nasal Polypi*) is described as one of double proliferating ethmoiditis, occlusion of the upper air passages anteriorly on both sides by polypi, and hypertrophy of the middle turbinates. Deflection of septum from the left side. The inner wall of the left antrum was bulging; left cheek swollen. The tumour can be felt attached to the cheek bone, just below the alveolar process. There is also a bulging into the mouth from about the line of the first bicuspid; it is not painful. Bistoury introduced met with little resistance until it reached the orbital plate. Nasal polypi had been removed at frequent intervals. Entire occlusion of the left nostril for the past month. The attempt was made to remove the walls of the antrum, but found tumour had spread so as to make resection of the jaw useless. Antrum curetted and packed with iodoform gauze. Bleeding was excessive. Patient died of exhaustion about a year later.

A portion of the tumour, examined by Ward A. Holden, was pronounced to be carcinomatous.

Reinhard's (16) (*Ein Fall von Primärem Epithelial-Carcinom der Oberkieferhöhle*) would seem to be a well-authenticated case of primary epithelioma of the antrum.

The patient was a male, sixty-five years of age. Had had a purulent discharge from the nose. For five years he had suffered from left-sided nasal obstruction. The left upper teeth had become loose, and a sensation of pressure and pain in the left side of the head, which for a short time had prevented sleep. The purulent secretion from the nose was foul smelling, and patient has lost twenty-three pounds in weight in the last six months. Nasal douches were used, but no other therapeutics. Six weeks previously the last molar tooth had been extracted, and now the foul-smelling secretion flowed directly into the mouth. Polypi were found in the left nares and removed with a snare. The patient had an appearance of suffering, but not of cachexia, and complained of the one-sided closure of the nose. The left cheek is somewhat swollen and painful on pressure. Pus is seen to flow from the ostium maxillare, and polyplike formations are also found in this locality. The hard palate on the left side feels somewhat soft, and yields to the pressure of the finger. A probe introduced into the antrum

does not find a free space, but rather a soft but solid obstruction. There was probably no glandular enlargement. A piece of tissue was taken from the opening in the alveolus, and also the polypoid swellings on the left middle turbinate. Both were examined microscopically, and that from the opening in the alveolus was pronounced epithelioma—the other was not. Upper jaw was resected, and the tumour was found to fill the entire antrum, and extended backward to the sphenoid, the pterygoid processes, and the base of the skull. Five weeks later there was no recurrence.

The details of Nicolai's (17) *Case of Carcinoma of the Antrum of Highmore (Carcinoma dell' Antro d'Highmore; sua Diffusione alla Cavita Nasale; Esportazione del Mascellare Superiore col Metodo Endo-Orale)* I was not able to obtain.

A most interesting case of epithelioma in the antrum of Highmore in a horse has been reported by Saake-Wolfenbüttel (18), detailing not only the history, but also giving the results of a carefully conducted *post-mortem*, together with a complete microscopical report.

The author was called in consultation, on account of suspicion of glanders. The horse had a large swelling in the region of the right antrum. In the centre of the swelling was an opening leading into the antrum. The cavity was partly filled with soft tissue. There was a muco-purulent discharge from both nostrils. The third molar in the right superior maxilla was gone; the second and third loose. In the cavity left by the third molar was a blood clot. The horse suffered from numerous hæmorrhages, which made it anæmic. A lymphatic gland in the right side of the neck was swollen and hard, but not tender. The lymphatic glands on the left side were not enlarged. The nasal mucous membrane, except for anæmia, appeared normal. The horse was very weak and the appetite was poor. The owner of the animal was given no hope of its ultimate recovery and had the horse killed.

Post-mortem. On opening the antrum, a greyish, sero-purulent fluid spurted out. The antrum was filled with a tumour mass, which, in that part of the cavity nearest the orbit, was of the colour and consistency of brain substance. In the lower part, especially in the region of the alveoli of the teeth, where it apparently originated, the tumour was greyish white in colour and of a firmer consistency. The thin lamellæ of bone which divide the cavity into separate compartments were destroyed. The lower turbinated bone, to which the tumour reached, was intact. The tumour was closely adherent to the surrounding tissues in the region of the second and third molar teeth, but was not adherent to the walls of the antrum cavity itself. The tumour had apparently grown from the alveoli into the antrum.

Under the microscope the tumour showed a fascicular structure of such a character that broad bands of connective tissue surrounded the microscopic field, which bands enclosed cells varying much in size and shape. The cells were, for the most part, rich in cell substance, and had bladder-shaped nuclei. Those cells which were in contact with the external boundary made by the connective tissue strands (we presume the author means the connective tissue surrounding the nests) were of the shape

of cylindrical epithelial cells with more or less longitudinal nuclei. Where the cells were grouped closely together the more internal had a polygonal shape, and the nuclei were not so easily stained. Now and then in the cell nests round bodies were seen, onionlike in structure, resembling the "epithelial pearls." These enclosed a number of cells which stained deeply with hæmotoxylon and aniline colours. The tumour is classified from the above-described structure as an epithelioma. Since the epithelium of the antrum is ciliated, the microscopic examination makes it very probable that the tumour did not arise from the walls of the antrum, but, as intimated above, from the periosteum of the alveolar border, and that the antrum disease occurred secondarily.

This case seems clearly to indicate that the growth made its start in the region of the alveolar process.

A well-authenticated case of *Epithelioma of the Antrum* would seem worthy of presentation to the members of this Society, for their deliberation and discussion. It having been my privilege to operate upon such a case, something over a year ago, I take pleasure in detailing the history, which is as follows :—

J. G., German, fifty-eight years, saloon keeper. Came under treatment March 7th, 1897. He is of heavy build, ruddy complexion, and full habit, weighing two hundred and fifteen pounds. Has always drunk beer and light wines and smoked a pipe. Six years ago he remembers having had pain in the region of the right antrum. The pain at that time was located in that region of the antrum nearest the nose. It has continued for three years, radiating in all directions, especially to the teeth, which have been always neglected. Several teeth in the right upper jaw were in a state of decay, and three years previously had been extracted. The pain, though not severe, had continued, and after one and a half years an opening into the antrum had been made through the alveolar process. There was but little discharge of pus or blood, and very little during the months that followed up to the time of operation. This opening had never closed. Four months ago he noticed a growth around this opening, which had rapidly increased in size. At the first examination there was found a large cauliflowerlike excrescence projecting from the alveolar opening. It was about two inches long from before backward, and three-quarters of an inch broad. It appeared to be a large mass of quite dense granulation tissue, extending along the alveolar process of the upper jaw ; but a more careful investigation revealed a pedicle, which extended into the antrum. While he had never had hæmorrhages, the mass bled freely whenever touched with a probe ; also when touched by his finger or when irritated by hard substances, such as bread-crusts. There was a sensation of fulness, with some pressure in the region of the antrum, but no external swelling or bulging, and no severe pain. Transillumination revealed a dark area over the entire region of the antrum, especially underneath the eye of the affected side. There was no glandular enlargement. The nasal cavity upon that side was found to be quite normal, with no polypi, no apparent enlargement of the turbinates, no excessive secretion, and but slight congestion of the mucous membrane. The eye did not protrude, and was

normal in every way. There was no family history of cancer, and he gave no history of having had syphilis.

Believing the growth to be made up of polypoid or granulation tissue, he was informed that an operation would be necessary for its removal. He was accordingly admitted to the Post-Graduate Hospital, March 15th, and the operation was performed the same day under ether. The large protruding mass was removed by the cold wire snare, after which a probe was passed into the antrum, which was found to be completely filled with the same kind of tissue. The opening was enlarged by means of curettes and gouges until large enough to admit the finger. The next procedure was to remove the entire mass from the antrum by means of curettes. From the beginning the hæmorrhage was excessive, but the patient being so vigorous and plethoric it was thought to be safe to proceed without making any special effort to check it. Special pains were taken to curette every nook and cranny, and the very large opening made it quite possible for this to be accomplished. The absence of any extension of the growth into the adjacent tissues or sinuses, together with its apparent benign character, rendered further operation unnecessary. The cavity was thoroughly cleansed with bichloride solution and carefully packed with iodoform gauze. The patient made an uneventful recovery, without fever, pain, or sepsis. The packing was renewed once in two or three days, and the antrum cleansed with boracic acid solution. After about six weeks the packing was discontinued, and the wound allowed to close up.

A note entered on June 1st is as follows: "General condition good; opening is closing up, and there is no sign of recurrence. He complains slightly that the right cheek is a little swollen, and that it feels stiff, but careful scrutiny does not reveal any swelling anywhere. The patient is attending to his business as usual. From this date to March 14th, one year after operation, he has been examined once a month. There are now no visible signs of recurrence, no pain or tenderness, nor glandular enlargement, and no loss of appetite or flesh. His weight is two hundred and eighteen pounds, a little more than before the operation, and his complexion is as ruddy as ever. Transillumination still shows a dark area underneath the right eye, and he still complains that there is a slight sensation of stiffness all over the malar region. The opening into the antrum is still entirely closed, and the whole appearance is healthy in every way. The eyesight is good. There is no fœtid or purulent secretion."

Last note, May 10th, 1898:—"One year and two months after operation. He still shows no sign of recurrence."

The mass removed with the snare, together with several masses curetted from the interior of the antrum, were submitted to Dr. Jonathan Wright for microscopical examination, and to my great surprise it was found to be an epithelioma. That the growth was primarily from the antrum there could be no doubt. Its gross appearance was certainly unlike epithelioma, which, together with the fact that primary epithelioma of the antrum is almost unknown, had led to the diagnosis of a benign growth. Dr. T. M. Prudden also examined the slides, and entirely

coincides with the views of Dr. Wright, and their report is as follows :—

"536. Several pieces of the growth removed by Dr. Phillips from the maxillary antrum were submitted to me for microscopic examination. Sections were made through them all. The largest piece, irregularly ovoid in shape, and about the size of a small English walnut, was cut in such a way that the sections perpendicular to the surface extended through the whole growth. It was seen to consist throughout two-thirds of its extent of œdematous tissue, characteristic of an ordinary œdematous polypus of the nasal mucous membrane. At one extremity, apparently the distal cells, the epithelial cells are proliferated, and dip down with irregular outlines and outlying islands into the loose œdematous stroma. Whorls of cells with hyaline centres are seen well within the epithelial tissue, while nests of epithelium and isolated epithelial cells are seen infiltrating the stroma, so that there is no sharp line of definition between the two. From these appearances, I am strongly disposed to consider this growth as an œdematous polyp at whose distal extremity a squamous-celled epithelioma has begun to develop.

"Recognizing, however, the doubtful reliability of the microscopic diagnosis in such a case, I have submitted a section to Dr. T. M. Prudden for examination, and, with his permission, I quote from his letter in regard to it.

"JONATHAN WRIGHT."

"I have looked at the specimen you sent me from the antrum with a good deal of interest. I agree with you that the structure is wholly typical of epithelioma, and I certainly see no reason why a shallow epithelioma should not develop on the surface of a mucous polyp as well as anywhere else. The only thing, however, which would make me hesitate in a diagnosis which would involve an operation is the uncertainty of the direction of the section in reference to the surface of the underlying mass. If this section were cut obliquely or approximately parallel to a folded surface, one might get just such pictures as this with only a simple hyperplasia of the epithelium, provided the thing were growing in a straightened place, which would permit the epithelium to pile up. On the whole, my impression is that it is an epithelioma, but the diagnosis would be made with the above-indicated reserve.

"T. M. PRUDDEN."

I have also had two camera-lucida drawings made, showing in the first, Fig. A, the region where the epithelial joins the œdematous portion of the growth; and Fig. 2, a high-power drawing, showing the infiltration at one point of the epithelial cells into the œdematous tissues. Dr. Wright has also sent a slide, so that anyone who cares to do so can examine the specimen.

Conclusion.—That there has been no recurrence is probably due to the apparent incipency of the growth enabling its thorough removal. The polypoid degeneration of the mucous lining of the antrum had no doubt existed for a long time. Had there been extension into the adjacent sinuses—especially the ethmoidal and sphenoidal regions—had the bony walls of the antrum become infiltrated or destroyed, or had there been extensive glandular enlargement, with a cachectic diathesis,

the results would doubtless have been very different. By the thorough removal of the mass, however, it is hoped that all traces of the epithelioma have been obliterated. And the absence of recurrence after

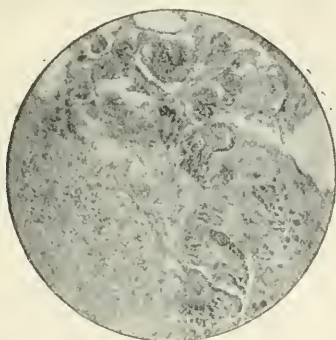


FIG. 1.

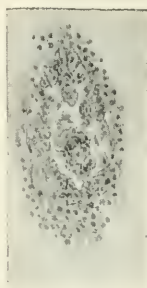


FIG. 2.

one year and two months have elapsed would seem to bear out this conclusion. The large opening, allowing such thorough curettement, is also believed to have contributed to the successful termination.

Large mucous polyps in the antrum of Highmore may become malignant. Early and thorough operation in all benign cases of antrum disease, both for the relief of the attendant affection and to prevent possible malignant developments, is to be recommended.

Under the circumstances, therefore, the microscopical report of the foregoing case would seem to indicate that the epithelioma had developed upon the surface of a mucous polyp.

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EXOSTOSIS OF EXTERNAL AUDITORY CANAL.

By M. A. GOLDSTEIN, M.D. (St. Louis, Mo., U.S.A.),

Professor of Otology, Beaumont Hospital Medical College, Consulting Aurist
Alexian Brothers Hospital, Aurist to Sisters of St. Joseph School
for the Deaf, etc., etc.

OSSEOUS growths in the external auditory canal are of quite frequent occurrence, and become of special interest mainly in consideration of their etiology and the various operative measures employed when their removal is indicated.

Unless these newly developed bone masses become of sufficient size to cause intense pain by direct mechanical pressure, offer obstruction to the free discharge of inflammatory accumulations in the tympanic cavity, or seriously impair the hearing by functioning as a foreign body, or influencing by pressure or adhesions any portion of the sound-conducting apparatus, a surgical interference may not be deemed an absolute necessity.

The etiology of the majority of cases of exostoses of the external auditory canal is often shrouded in mystery.

According to many authorities, syphilis and the rheumatic and gouty diatheses play important rôles as causative factors. Heredity is also a factor frequently noted. The most tangible and comprehensible cause, yet one not often met with, is that of a long-standing direct irritation and chronic inflammatory condition of the walls of the external auditory canal.

The text-books classify osseous growths in the aural canal into (1) congenital exostoses; (2) acquired exostoses.

Much interesting information on this subject, especially referable to the etiology, has been gathered by the extensive researches of Seligman, Wyman, Blake, Virchow, and others. The exostoses found by Seligman with such relative frequency in the examination of the crania of North American Indians seem to belong, with perhaps few exceptions, to the class of *congenital* growths, as distinguished from *acquired* exostoses.

Blake examined one hundred and ninety-five skulls of the mound-builders of Tennessee, now in the collection of the Peabody Museum in Cambridge, Mass. In thirty-six exostoses were found in one or both canals, as well as narrowing of the canals.

Moos does not endorse the syphilis, rheumatic, and gouty diathesis theories. He notes in the cases that came under his observation that the point of development of the exostosis was invariably from the upper wall of the external auditory canal, almost at the distal extremity. He

advances the opinion that these growths are the result of irritations occurring during the development of the temporal bone : the uniting of the annulus tympanicus with the squama.

Virchow, in the examination of one hundred and thirty-four Peruvian Indian skulls, found exostoses in eighteen. Contrary to the opinion advanced by Moos, he describes the outer part of the osseous external auditory meatus as the point of predilection ; he does not cite a single case in which the exostosis developed at the margin of the pars tympan, as noted by Moos.

The conclusions thus far reached, then, indicate that even the special and detailed investigations of careful and experienced observers are at variance.

That the frequency of exostoses in the aborigines of America may be due to certain race peculiarities, such as artificial elongation of the skull induced by pressure during infancy, seems possible, and could be further substantiated by the statistics furnished by Bezold.

In the examination of one thousand nine hundred and eighteen German school children, Bezold does not record the existence of a single case of exostosis.

Welcker, on the contrary, claims "that these exostoses are not extremely rare among the cultured population of Europe, and, as shown by the text-books and C. O. Weber's collection, the external auditory canal is a favourite position for them."

Retaining the classification of exostoses into congenital and acquired, we note in recent otological literature (with the exception of the investigations of the crania of aborigines) the extreme rarity of the congenital form.

Contrary to the rule in other parts of the body, exostoses in the auditory canal are generally painless. The point of origin in the development of the case herewith recorded has been definitely determined to be at the outer portion of the osseous external meatus, close to the junction of the cartilaginous with the bony portion of the posterior wall of the auditory canal.

Henry C., aged twenty-three years, presented himself for treatment with the following history :—Three years ago patient suffered with an acute earache of two to three weeks' duration. The aural canal was swollen and painful on slightest pressure ; the sensitive area included the domain of the facial nerve of the affected side, as indicated by impaired motor function ; hearing was considerably impaired. Several acute exacerbations recurred in this series of symptoms, each of about three days' duration.. Some relief was gradually afforded by constant applications of dry heat and warm instillations in the ear.

Convalescence being established, patient was then annoyed by frequent itching sensations in the aural canal, which he temporarily relieved by the counter irritation of matches and toothpicks vigorously applied. Even this pruritic attack subsided in a few weeks, and no further attention was given the ear until shortly before his application for treatment, when he complained of a disagreeable feeling of obstruction, intense deafness, and occasional pain in the left ear.

On examination I found the left ear assuming a position at right angles to the side of the head ; the orifice of the canal was very large, filling up its entire lumen ; and appearing within half an inch of the external opening of the canal was a rounded mass, offering considerable resistance to the touch of the probe, pale red in colour, somewhat painful on pressure. With a very thin probe I was able to circumscribe the convex surface of the tumour, tracing its point of fixation to the posterior wall of the auditory canal.

As to the character of the growth, nothing further could be determined ; I supposed it to be a large, dense, fibrous polypus, and made preparations for its removal accordingly. The patient was anæsthetized, as even the manipulation of examination caused considerable pain and vertigo. A number four piano wire was passed around the tumour, and a very firm traction applied to a Wilde-Blake snare. When the wire was drawn taut about the tumour it snapped as though it were a cotton thread. Three other wires were adjusted, with the same result. My suspicions were now aroused as to the nature of the growth. Incising the integument covering of the tumour, the point of the knife met with much resistance ; this, on closer examination, revealed its bony structure.

From the large size of the snare loop I judged the tumour to be of considerable depth, probably extending the entire length of the osseous portion of the canal, and perhaps involving the annulus tympanicus, with attachments deeper in the delicate structure of the petrous bone. The question suggested itself : would the application of mallet and chisel, under the circumstances, be a justifiable and advisable one ?

Removal with the mallet and chisel has frequently been resorted to, but the difficulties of the operation, the small working area in the aural canal, the delicacy of structure of the surrounding tissues, the concussion of the mallet in this area, all constitute decided objections to such a procedure.

The most successful operative results have been attained with the dental engine and drills. Obstruction of the field of operation by blood and bone dust thrown forth by the drill often make the use of the dental engine somewhat impracticable.

However, simple measures in surgical technique should always be given the preference over complicated mechanism whenever applicable.

The working area for the introduction of an instrument behind the tumour was limited, but after several attempts I succeeded in placing a long, shallow, concave curette over the convex surface of the tumour, and with a gentle, firm leverage the mass was suddenly loosened, and carried with the curette out of the canal. The slight hæmorrhage ensuing was easily arrested by brief application of a gauze tampon. The canal was found fairly clear. The shape of the walls appeared somewhat distorted ; the portion of the drumhead which was visible appeared congested and irregular in surface, with a medium-sized perforation in the posterior inferior quadrant. The canal was irrigated with a warm three per cent. carbolic acid solution, dried, dusted with iodoform, and lightly packed with gauze.

The differential diagnosis of this case presented some difficulties. As the tumour completely filled the lumen of the canal, very little could be determined as to its mobility, area of attachment, and consistency. Fortunately, the elasticity of the anterior wall of the canal permitted circumscribing with the probe and the introduction of the flat curette. The pedunculated character of the growth was determined only on examination of the mass after its removal, and an inspection of the canal wall to which it had been attached.

As a suppurative otitis media existed at the time of operation the tumour was constantly bathed in pus, and presented the appearance of a large, hard, fibrous polypus. Again, as pain was one of the principal symptoms, and the complaints of the patient only of a few days' duration, and the interior of the canal presented a picture of congestion and inflammation, it might also have been reasonable to suppose that we were dealing with a large furuncle in the depth of the canal.

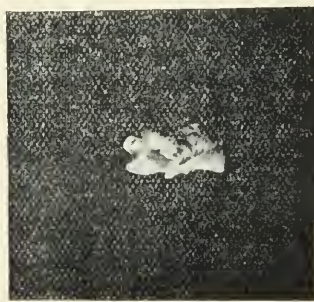
Only after the outer covering of the tumour had been incised and the underlying bony tissue revealed was the real character of the growth established.

On examination, the exostosis was found encased in an elastic capsule closely adherent to the bone. The outer surface of this capsule appeared to be epithelial in character. With some difficulty the capsule was stripped from the underlying bone and exposed to view. A large ivory exostosis, irregular in surface, with several small but well-marked pedicles on the side where it had been attached to the wall of the canal, were seen.

The tumour measured one and a-half centimètres in its long diameter and one centimètre in its short diameter. The illustration represents



FRONT VIEW.



SIDE VIEW.

the specimen in front and lateral view, actual size, after stripping it of its fibrous envelope. The net weight of the exostosis was five hundred milligrammes. One of the special features to be observed in the development of this exostosis was the large size of the growth, dependent for its attachment on two slim, delicate pedicles.

Considerable inflammatory reaction followed the removal of the tumour, the patient suffering pain for several days; the canal was much

swollen ; a severe otitis media with profuse discharge, and of about ten days' duration, was also a disturbing sequel. The mild dry antiseptic treatment, however, soon evinced its restorative influence, resulting in a healthy appearance of the meatus in three weeks. Hearing tests indicated an almost complete restoration of the functioning power of the affected ear.

A CASE OF EPITHELIOMA OF THE MIDDLE EAR.

By ERNEST WAGGETT, M.B., B.C.Cantab.,

Assistant Surgeon London Throat Hospital.

With REPORTS OF TWO CASES OF EPITHELIOMA OF THE EAR

Treated by Injections of Pyoktannin,

By GRIFFITH C. WILKIN.

IN reporting a case of this nature before the Hungarian Otological Society, October 15, 1897 ("Rev. Hebd. de Lar.," April 9, 1898), Hulti mentions that but twenty cases are to be found recorded in the literature of the subject. Whether or no an absolutely exhaustive search, such as Hulti does not specifically claim to have made, would add to this number I am not in a position to say. When reading up the subject two or three years ago I met with a number considerably under twenty. On the other hand, I have, during the last five years, met with three cases, and have heard of one at first hand, and none of these have been hitherto reported in one of the special journals. In the belief that the literature would not be so very scarce if all instances were brought forward, and in the hope that other cases may be forthcoming from readers of the JOURNAL, I insert the following notes, which unfortunately are far from complete, as the patient passed out of my hands before a detailed report of the history could be obtained.

The patient, a stout Jewish woman of fifty, came to the hospital in the beginning of October, 1897, complaining of foul discharge from the left ear, with a considerable amount of pain, which had been on the increase since June or July. She gave a history of otorrhœa, with which she had been troubled on and off since childhood. No serious aural treatment seemed to have been adopted ; the condition of the ear appeared to have given rise to no special attention or anxiety. Facial paralysis was absent. On examination the inner half of the left meatus was found to be occupied by polyp of ordinary appearance, and bathed in foul pus. The polyp was removed with the snare, and as the patient was sensitive and nervous no further examination was made, but antiseptics were ordered, and instructions given to return in two days' time. This, however, she failed to do, and it was not until driven by severe pain that she returned seven weeks later. She reported that the pain, relieved for the time, had returned with increasing severity, that blood had been found in the now copious discharge, and, further, that at some

time close upon her first visit weakness had been noticed in the left side of the face. The growth had returned with rapidity, and I now found the concha filled with the bulbous end of a large polypus. This was of a purple colour, slightly mammillated, exceedingly friable, yet not bleeding readily when probed.

The greater part of the polyp was removed with the cold snare without unusual hæmorrhage. Examination of the stump which remained showed it to arise from the middle ear, and to have no attachments to the meatal wall. The exact condition of the middle ear could not be made out, as the diameter of the stump was little less than that of the meatus, and further probing was thought undesirable and unnecessary at the moment. The polyp was firm to the touch, but extremely brittle. Microscopic examination showed a typical specimen of squamous epithelioma with the evidences of rapid growth. With the exception of a small amount of loose fibrous tissue, poor in blood vessels, the polyp consisted entirely of epithelioma growth arranged in a number of interlacing processes springing from a cortical portion. Numerous cell nests and karyokinetic figures were to be seen.

Clinically the case was one of early epithelioma involving the middle ear and facial nerve only. The meatus and the maxillary articulation were free from disease, and evidence was wanting of any encroachment into the mastoid region or to the meninges. No enlarged glands could be felt. Examination of the hearing by bone conduction was unfortunately postponed. With regard to the duration of the disease, the only data were to be gained from the fact that pain began to be noticed some four or five months previously, while facial paralysis was of not more than six weeks' standing. Under the circumstances the question of attempting to deal radically with the disease was worthy of consideration, and the patient was to have been seen by other members of the staff with this object in view; but unfortunately she had been alarmed at the amount of interest taken in her condition, and could not be induced to return to the hospital.

In such a case as this, operation would seem to be justifiable; and though it is true that an unsuccessful attempt would probably be followed by increased rapidity of growth, it seems reasonable to suppose that a large opening in the mastoid region would, to some extent, alleviate the pain due to blocking of growth and pus in the deeper parts.

The subsequent details of the case I am unable to report. The patient died just six months from the date of diagnosis with extensive infiltration of the parotid region. No *post-mortem* examination was made.

MR. G. C. WILKIN'S NOTES.

THE patient, a widow, aged sixty-one, was admitted in October, 1893, to the London Throat Hospital. The family history was good, nothing, so far as I could ascertain, pointing to carcinoma.

The history of the present illness given by the patient was as follows:—About twelve months previous to admission, while crossing the road, she was knocked down by a cab and very much bruised and injured on

the left side, including the ear. About two months later she suffered from great pain in the left ear, which kept her awake at night. For this she attended a hospital for two or three months. During this time and ever since the ear frequently bled without being touched. About a month before I saw her she had, she said, something about the size of a marble removed from the ear.

State on admission.—There was a large well-marked swelling in front of the left ear, reaching down as far as the angle of the jaw, forwards to the front border of the masseter muscle, and upwards to the level of the zygoma. There was also a marked swelling behind the pinna, lifting the whole auricle upwards and outwards. This swelling was not tender, but the skin was discoloured and in parts adherent. There was facial paralysis on the left side. There were no enlarged glands to be felt at this time. The discharge from the meatus was very foul and of a watery character. The meatus was almost entirely closed by what looked like a true overgrowth of skin, behind which were granulations that readily bled when touched. The patient was in a very depressed and emaciated condition. The general examination revealed no lesions of the internal organs. Her urine was very foul smelling and thick, but contained no albumen or sugar.

Before treating this case I removed some of the tissue from the external meatus, and, Dr. Waggett, the pathologist to the hospital, being absent, Dr. Rolleston, of St. George's Hospital, kindly made a microscopical examination of the tissue for him. His report pronounced the growth to be a squamous-celled epithelioma. On receiving this report I reviewed the case. I had to deal with an epithelioma which had spread forwards and backwards, involving the mastoid cells and the soft tissues in front of the ear. The external auditory meatus was full of granulation tissue, which readily bled when touched. Operative interference was therefore clearly out of the question. Remembering Prof. von Mosetig's treatment, and the cases which he brought before the Vienna surgeons, I felt that I could not, with justice to my patient, withhold this treatment; and, therefore, having previously satisfied myself that the drug, when used parenchymatously, relieved the pain which sufferers from carcinomatous growth so frequently endure, and which in this case was so marked a symptom, with the consent of the friends I commenced a course of injections. I began with a 1 in 500 solution, continuing this strength for ten days, when I increased the strength to 1 in 300. The pain was greatly relieved by the pyoktannin, which caused no ill effects constitutionally. The urine, which previously to its use had been very foul, became quite sweet, and the general appearance of the patient was greatly improved.

On the ninth daily injection the following note occurs: "Fifteen minims of a 1 in 500 solution injected seven millimètres below and eight millimètres behind the ear. After the second injection had been in the tumour for about three minutes, a quantity of pyoktannin, apparently unaltered, came from the external auditory meatus. The anterior swelling, which has decreased in size, is now soft and fluctuating. In the softened fluctuating points a violet-coloured gelatinous mass was found,

which only in one had any trace of pus, and this one had a direct communication with the air."

On the fifteenth daily injection, by an error the strength was raised to 1 in 100. Within a few days the discharge from the ear became a deep violet colour, and this continued, though the injections were discontinued. Twenty-six days after the commencement of treatment, at the patient's own request, she was allowed to go home. A fortnight later I saw her again, and found a remarkable change in the affected part. The cavity, viewed from where the external meatus was, is several times as large as when she left, occupying a large portion of the mastoid and burrowing forwards and downwards under the skin covering the angle of the jaw, the pocket being filled with clear fluid strongly coloured with blood. She was readmitted two days later, but home troubles and the disease were too much, and she steadily went downhill, death taking place January 5th, 1894.

For the following *post-mortem* notes I am indebted to my friend and colleague Mr. Waggett :—

Mrs. C.—*Epithelioma of the Ear.*

General.—Fair deposit of subcutaneous fat in spite of prolonged illness.

Lungs.—Bronchial catarrh, not excessive. Both in part adherent to parietics. No solidification.

Liver.—No new growth (microscopical : fatty).

Spleen.—Small, dark, firm ; no new growth (microscopical : natural).

Kidneys.—Rather large, but cortex narrower than natural ; no new growth (microscopical : natural).

Heart.—Natural ; no atheroma of vessels.

Head.—Total left-sided Bell's palsy. An excavation the size of a large chestnut occupies the position of the left external auditory meatus and petrous bone, and opens externally by an irregular orifice large enough to admit the thumb, produced by erosion of the greater part of the tragus, antitragus, and concha. The walls of this cavity are of extremely irregular aspect, owing to the projection into it of masses of the new growth, which for the most part constitutes them. The cavity is indeed the result of erosion of a solid growth of considerable dimensions, occupying the region of the left ear.

After removal of the calvarium, the dura mater (which, together with a thin layer of new growth and scattered pieces of carious bone, proved to be the sole roof to the cavity) appeared perfectly natural from above. There was no undue injection of vessels, no exudation, no adhesions, and the brain was also quite unaffected.

The mass of firm new growth which a few weeks previous to death had been present both in front, below, and behind the auricle was found to be for the most part replaced by softened tissue, occupied in five or six places by small cavities of ill-defined limits, containing semi-fluid *débris* stained purple with pyoktannin. The skin below the auricle was dissected for some inches from the underlying tissues by gravitation of puruloid fluid, which had found exit by a ragged orifice in the side of

the neck at the level of the cricoid. The diseased tissues, bony and soft, were removed *en masse* by incisions and saw-cuts carried into the foramen magnum. The new growth was found to extend inwards as far as the atlas, the left half of which was found to be eroded thereby. The neck of the jaw bone is also eroded. The lymphatic glands in the neighbourhood of the growth appear to be perfectly healthy, and no evidence of secondary growth is found on microscopical examination. Careful examination of the specimen after hardening in spirit proves the roof of the cavity to consist of a very thin layer of new growth, in which are embedded scattered pieces of carious bone and the apparently healthy dura mater. The internal carotid artery, which is pervious throughout, presents at the inner extremity of the cavity as a vertical rounded ridge. It is covered by a thin layer of new growth. The internal jugular vein, occluded by clot and somewhat flattened, forms a considerable portion of the floor and inner wall of the cavity, running as a broad flattened ridge obliquely upwards and backwards external to the carotid artery. At its lowest point anteriorly the cavity communicates freely with the naso-pharynx through a portion of the Eustachian tube.

Microscopical examination shows the tumour to be a typical squamous epithelioma, with abundance of cell nests in the older portions. Specimens cut from those parts of the parotid region where firm tumour has disappeared in consequence of the pyoktannin injections, are found to be composed of loose fibrous tissue and fat, and to be destitute of an epithelial element. This would appear to be due to development of the stroma of the tumour, accompanied by a degeneration of the epithelioma cells; the line of transition between the vigorous neoplasm and the soft tissue replacing it presents epithelioma cells with indistinct outline, and failing to take the hæmatoxylin stain; disintegrated nuclei and granular *débris*, and, in isolated portions, considerable groups of leucocytes. Fresh sections from portions of the tissue found at the autopsy to be purple showed a diffuse staining of the fibrous tissue.

Examination of the lymphatic glands, liver, spleen, and kidney showed absence of secondary growth or of any staining by the pyoktannin.

Remarks.—Although I have no record of the fact, I know that clinically the growth appeared too soft when first seen for an epithelioma, and its growth seemed too rapid. Some two years after this another case of epithelioma of the ear came under my treatment. In this case also some of the affected tissue was examined microscopically before the pyoktannin treatment was adopted. The patient had a large growth in the meatus and a hard mass in the parotid region, rising slightly above the ear. The mastoid was not affected. The pyoktannin acted quite differently in this case, the growth rather increasing than diminishing, though this increase did not appear to be due to fresh growth. I was anxious to remove this with the knife so as to enable me to reach the deeper limits, but the patient would not consent to this, and disappeared. What was the cause of the different action of the drug in these two

cases? Was it due to the difference in the growths themselves, as evidenced by the touch, or was it due to some chemical alteration in the drug from time, temperature, or electrical influence?

Whatever the cause, the difference was most striking. In the first case from the commencement the growth began to contract, and the occluded external meatus first became patent, then assumed its natural shape, and, gradually enlarging in its deeper part, at last, by the crumbling away of tragus, antitragus, and concha, became one large cavity.

The reverse apparently happened in the second case. The only resemblance in the two was the violet colour, for even the pain, relieved in the first case, appeared increased in the second at times.

The shrinking and consequent hardening of the growth following the injection would seem to point to its usefulness as a preliminary step to operation, for by it the limits of the growth should be clearly mapped out.

In conclusion, I would urge that in cases where it is hopeless to use the knife, especially in the softer and more rapidly growing forms of carcinoma and sarcoma, pyoktannin may be resorted to.

ANNOTATIONS, &c.

PROLAPSE AND TUBERCULOSIS OF THE VENTRICLES OF THE LARYNX.

By DUNDAS GRANT.

THE drawings and microscopical sections from the larynx of a presumably healthy person demonstrated by Dr. Jobson Horne at a recent meeting of the Laryngological Society of London, deserve earnest attention. The following is Dr. Horne's description of an outgrowth from the fundus of the ventricle:—

“Under the microscope this tongue-like excrescence was seen to be very similar in structure to the adjacent ventricular band. It was surrounded from root to tip with a columnar epithelium, which at points of pressure had been worn away, but had undergone no metaplasia. Immediately subjacent to these points of detrition there was some small cell proliferation, and this, in the absence of any specific irritant, Dr. Horne was inclined to attribute to traumatism occasioned by compression of the growth within the sacculi. The growth taken as a whole suggested a duplication of the ventricular band. Dr. Horne considered that the specimen threw light upon the histology of some of those tumours variously described as prolapsus, procidentia, or hernia ventriculi, or fibroma ventriculi, and if seen during life it would probably have been described under one or other of those terms.”

In this he is, in the main, in accordance with Gouguenheim, who, at

the International Medical Congress at Paris in 1889, read a paper on several cases of prolapse of the ventricle, all of which occurred in persons affected with laryngeal tuberculosis. The conclusion seems fairly obvious that the growths observed by Gouguenheim originated in the intraventricular body described by Dr. Horne. This was no doubt a tubercular infiltration, and is readily explained by the presence of the lymphoid tissue so clearly demonstrated in Dr. Horne's sections. The presence of this anatomical structure accounts *à priori* for the early and frequent occurrence of tuberculous disease in the ventricle, and Dr. Horne mentioned the extreme—almost unexceptional—frequency with which he found bacilli in the contents of the ventricles in tuberculous subjects. Apart from actual infection of the intraventricular tissues, the presence of bacilli might be expected in that region in any person suffering from pulmonary tuberculosis, because the ventricular bands close for a moment at the commencement of the act of coughing, and sputum containing bacilli can hardly avoid being “entrapped” by them to some extent when driven upwards by the expiratory blast.

This mechanical arrangement, combined with the anatomical structure demonstrated by Dr. Horne, would account doubly for the incidence of tubercular infection in the ventricles of the larynx.

As a corollary to these propositions we may point to the well-proved therapeutic value of antibacillary injections into the trachea. Much of the material injected is inevitably coughed out, but some is also equally inevitably “entrapped” in the ventricles, where its action is, in the light of the above observations, imperatively demanded.

A CASE OF AGMINATION OF SECRETION ON THE VOCAL CORDS AT THE SEAT OF ELECTION OF SINGERS' NODULES.¹

By Dr. DUNDAS GRANT.

MISS K., aged twenty-one, student of singing, complains of want of timbre, and of hoarseness and discomfort in the upper part of the throat after singing for a short time. On first examination the cords were found to be very slightly congested, and to approximate to an abnormal degree at the junction of the anterior and middle thirds, where there was a frequent accumulation of a thick secretion of almost milky whiteness.

There was hypertrophy, or at least turgescence, of the inferior turbinated body, for which the galvano-cautery had been practised. The pharyngeal tonsil was hypertrophied, and this was removed by means of forceps. An unusual degree of hæmorrhage resulted, although there was no suggestion of the hæmorrhagic diathesis. Within the last few days the anterior extremities of both inferior turbinated bodies have been removed, the bleeding being again unusually copious, and only with difficulty checked by means of firm anterior plugging. It was probably fortunate that complete turbinectomy was not performed.

¹ Shown at the Laryngological Society of London.

Since this operation the secretion in the larynx has very considerably diminished as compared with what it was when the notice of this communication was sent on to the Secretary, but there is now a scarcely perceptible acuminate projection on the vocal cord at the situation mentioned.

Such a minute departure from the normal seems a trivial condition, but the question arises as to whether or not it is the earliest stage of a singer's nodule, calling for absolute rest. In any case the treatment of the nose must be perseveringly attended to.

In view of the recent account of the structure of the vocal cords by Alexander (*"Arch. für Laryngologie,"* Band VII., p. 254), and his observation as to the occasional, though not constant, existence of glands with openings in the neighbourhood affected by singers' nodules, the consideration of these slighter cases is interesting and important.

A CASE OF SIGMATIC DYSLALIA.¹

By DUNDAS GRANT.

MISS P., aged thirty, occupied as a lady's maid, came to me last week complaining of stuffiness of the nostrils and defect of speech, which, to my ear, was identical with that produced by cleft or paralysis of the palate. There was hypertrophy of both inferior turbinated bodies. The palate was normal, but slightly deficient in closure during the utterance of vocal sounds. In particular, she was absolutely unable to produce the hissing sound of the letter "s," for which she substituted the guttural "k" (obviously the substitution of the one sound for the other in such a word as "kiss" might be expected to lead to possible misunderstanding of a serious kind). She has never experienced regurgitation of liquids, and is not aware of ever having suffered from diphtheria. Further, she has never met with anybody having the same peculiarity.

Cocaine was applied to the hypertrophied turbinals, and the patient's comfort was so considerably increased thereby that galvano-caustic puncture was practised immediately. The patient, in spite of the fact that the nasal passages were thereby made more patent, felt less difficulty in the utterance of hissing sounds. The paresis of the palate was, possibly, the result of chronic nasal obstruction, as pointed out by Greville Macdonald and others.

A very simple method of training was then initiated. She has practised hissing : first with both nostrils closed ; then with one closed ; then with both open ; and now, as long as her attention is directed to the point, she is generally successful in her efforts. I have since observed that, by making her project the lower jaw forwards—as is done by the action of the external pterygoid muscles—so as to bring the lower teeth almost in front of the upper ones, she can produce the hissing sound with still greater ease ; and she is practising this movement with very great advantage.

¹ Shown at the Laryngological Society of London, May, 1898.

As she is highly intelligent, and as the condition interferes considerably with her obtaining a good situation, she is devoting herself to practising the exercises which I have suggested to her.

SOCIETIES' MEETINGS.

LARYNGOLOGICAL SOCIETY OF LONDON.

Ordinary Meeting, May 11th, 1898.

HENRY T. BUTLIN, Esq., F.R.C.S., *President, in the Chair.*

Mr. H. BETHAM ROBINSON. *A Case of Carcinoma of Larynx subsequent to Laryngeal Tuberculosis.*

E. D., a single woman, aged thirty-six. The first time of any throat trouble was in 1878, when she was hoarse, and at times aphonic. She had no pain or difficulty in swallowing until August, 1882, after an attack of tonsillitis. In December, 1885, she saw Sir Felix Semon, who ordered daily treatment. This she did for three months, and then ceased attendance. After some months she returned with chronic laryngitis. She attended the hospital for some years with varying laryngeal symptoms, but since the beginning of 1893 she has been unable to speak above a whisper. In July, 1896, when she complained of weakness, shortness of breath, loss of appetite, and wasting, Sir Felix Semon said it was tuberculous laryngitis, and she had lactic acid applied twice a week. She gradually got worse, and in March, 1897, the extreme dyspnoea required tracheotomy done. Her condition improved, gaining flesh and speaking fairly up to November, since which time she has been only able to whisper. In December last the swelling on the right side of the neck was first manifest, and about the same time the margins of the tracheotomy wound were becoming prominent. Laryngeal examination showed that the subglottic space was completely filled with growth. Since this time it has extended, so that now the right pyriform sinus has become invaded and filled up, and both cords are almost completely obscured. The sprouting about the tracheotomy wound has increased. The growth on the right side of the neck has softened, so that a carcinomatous cyst has formed. During this time, however, her health has remained very good, and she has not lost flesh appreciably.

There is a history of consumption on both sides of the family, father and one sister in particular succumbing; there is also a history of cancer, both mother and grandmother dying of cancer of the womb.

The chest gives signs of excavation at both apices, especially on the right side, but the disease is now quiescent.

On microscopical examination of portions of the growth it proves to

be a non-cornifying epithelioma, such as might arise from the glands of the laryngeal ventricle.

Mr. H. BETHAM ROBINSON. *A Case of almost Fixed Cords from Syphilis simulating Bilateral Abductor Paralysis.*

E. J., a married woman, aged fifty, has enjoyed good health except on occasions during the past few years. She has had five children, all healthy.

In October, 1886, she first attended St. Thomas's for laryngeal tumour, and the diagnosis was secondary syphilis. She complained then of sore throat, loss of voice for a few weeks at a time, and bronchitis. In May, 1887, she returned with similar symptoms, and was treated for a while. Five years ago she again sought advice for similar symptoms, which have continued since.

In February of this year she had influenza, followed by increased shortness of breath.

Early in April there was great dyspnœa, and on examination of larynx the present local condition was seen.

Present Condition.—On inspiration the cords are seen almost meeting in the median line except in the interarytenoid region, the left cord being on a plane slightly superficial to the right; on expiration they recoil about to their normal position—in fact, the appearance produced is suggestive of delayed innervation. On phonation the cords are adducted normally. There is no definite swelling of soft parts, but some appearance of thickening in the arytenoid region. The left cord is still injected.

The chest is normal, no swelling in the neck, and no signs of any bulbar or nerve affection. Her pupils and knee jerks are normal.

The question in this case seems to be whether the local laryngeal signs are dependent on nerve lesion or on an old syphilitic infiltration causing some hampering of the movements at the crico-arytenoid joints and muscular degeneration. There has probably also been some perichondritis in addition in posterior part.

The muscular wasting and altered tension of the cords fully explain the appearance produced on inspiration.

With the disappearance of the catarrh her voice and dyspnœa have nearly gone.

For general treatment she has had iodide of potassium, but owing to the great discomfort produced this has been given up.

Mr. CRESSWELL BABER. *Kirstein's Autoscope.*

This is the latest form of instrument used by Dr. Kirstein, which consists of a strong rectangular metal tongue depressor. The blade of the instrument measures about eleven centimètres by fifty-one millimètres, and is three millimètres thick. For a distance of five centimètres from the tip the blade is curved, forming a segment of a circle of 13.5 centimètres radius. The end has a slight depression to receive the middle glosso-epiglottic ligament, and the edges are carefully rounded. For

illumination the ordinary forehead mirror or Kirstein's electric frontal lamp may be employed. This is all that is required for examination; for demonstration the electric autoscope is used.

The method of using the instrument was explained, and the opinion expressed that direct inspection of the larynx and trachea as employed by Kirstein was worth practising by laryngologists for use in suitable cases, as a supplementary means of examination, not as a substitute for laryngoscopy.

Dr. PEGLER. *Case of Malignant Disease of the Laryngo-Œsophageal Region.*

R. D., aged thirty-seven, married, complained of swelling in the throat, and difficulty, but not pain, in swallowing.

Examination showed extensive thickening and ulceration of the œsophageal aspect of the arytenoid region and interspace and ary-epiglottic folds. A broad-based neoplasm projected towards the middle line from the left arytenoid, and obstructed the view of the larynx. It was ulcerated on the surface. A mass of hypertrophied glands, the uppermost of which was breaking down, and on the point of discharging through the thinned epidermis, was conspicuous on the left side of the neck. Others were commencing to enlarge on the right side. The throat trouble dated from about a year. From the laryngoscopical appearance and history there seemed at first some chance of the disease being syphilitic—or at all events of its being a mixed case—but sections of the neoplasm, part of which had been removed with a snare for the purpose, displayed every characteristic of epithelioma, and scrapings from the broken-down gland cavity yielded epithelial squames only, and no tubercle bacilli. The interior of the larynx was healthy so far as could be seen after removal of the growth.

Constant spitting of an abundant watery secretion was the chief trouble besides the dysphagia, and it was very desirable that some means should be found to relieve this.

Dr. BOND stated the same patient had attended his clinic at Golden Square for some weeks. She had then an enlarged gland externally and ulcerating growth on left side of pharynx, extending behind arytenoids. Although there was some slight improvement under iodide at first, the malady afterwards steadily progressed, and was thought to be malignant. Dr. Bond recommended palpation of the growth in such cases as an aid in diagnosis.

Mr. SPENCER suggested the use of atropine pills to check the excessive salivation.

Dr. DUNDAS GRANT. *A Case of Recurrent Multiple Papillomata of the Larynx.*

The patient, a female aged twenty, whom he first saw in February, 1895, had then several large papillomata in the larynx. These were removed by means of the forceps, but recurred repeatedly. Various chemicals were applied, among others chloride of zinc, absolute of

alcohol, tincture of thuja, and perchloride of iron, but none had any effect until in October, 1896, salicylic acid dissolved in alcohol was applied daily by means of a fine laryngeal probe coated with cotton wool, in strength gradually from one up to ten per cent. Under this treatment the stumps shrivelled up and the recurrence was permanently stopped.

Dr. DUNDAS GRANT. *Nodal Agmination of Secretion on the Vocal Cords of a Singer. Query—Incipient Nodules.*

The patient, a female aged twenty-one, a student of singing, complained of want of timbre in the voice. There was a frequent accumulation of white secretion at the junction of the anterior and middle thirds of both vocal cords, the seat of election of "singers' nodules." On the removal of the secretion a tiny acuminate projection could be seen at the spot, but this was so small that it was doubtful whether it amounted to a morbid condition at all, or whether it was the earliest stage of a nodule. There had been considerable nasal obstruction, which had been removed by treatment, and since then the secretion on the vocal cords had very greatly diminished.

Dr. BENNETT said he could only see a trace of a nodule, and thought the patient might resume her studies without any risk of permanent damage to the larynx.

Dr. DUNDAS GRANT. *Case of Sigmatic Dyslalia.*

A female aged thirty, who complained of stuffiness in the nostrils, and a defect of speech resembling that produced by cleft of the palate. In particular, there was absolute inability to produce the hissing of the letter "s," for which was substituted the guttural "k." The palate was somewhat paretic, and the turbinated bodies hypertrophied. On contraction of the latter by means of cocaine the feeling of discomfort in the nose was removed, and utterance of the letter "s," in spite of the increase of nasal freedom, became more easy. When the nostrils were compressed hissing became easier still. The turbinated bodies were cauterized, and the patient instructed in the method of exercising herself in the utterance of the hissing sound.

Note.—Since the exhibition of the case Dr. Dundas Grant has found that the letter "s" is more easily produced when the patient projects the lower jaw forwards, and she is exercising herself in this movement.

Dr. PEGLER inquired whether the high palate he observed in this as well as in some of his own cases might have anything to do with the speech disability. Removal of the nasal obstruction, primarily responsible for the paresis of the soft palate, did not improve matters much, as more air passed through the nose than before. When this patient's nostrils were closed she pronounced the "s" in "kiss" very fairly. He thought the elongated uvula in this case rather aggravated the paresis.

Dr. SHARMAN. *Sessile Papilloma of the Left Tonsil associated with Pedunculated Papilloma of the Left Posterior Faucial Pillar.*

F. H., a boy of fifteen, came to the hospital on April 25th, 1898, complaining of difficulty in swallowing and in breathing through the nose of

about one year's duration. He was found to have chronic enlargement of both tonsils, a central pad of post-nasal growth, some enlargement of both inferior turbinates, and some slight chronic laryngitis. On the surface of the left tonsil is an apparently sessile papilloma, the size of half a small split pea; and behind the tonsil, growing from the left posterior pillar of the fauces, is a small pedunculated papilloma rather larger in size. Dr. Sharman thought the case worth showing in view of previous remarks at the Society this session on the subject of the rarity of benign growths of the tonsil, and also in view of Dr. Rose Paterson's theory that such papillomata really grow not from the tonsil proper, but from the plica triangularis. The tonsil will probably be removed, but the boy's throat up to the present has not been subjected to any surgical interference whatever.

Mr. ATWOOD THORNE for Dr. HILL. *Patient with Laryngeal Paralysis (previously shown at March Meeting) who has recently had several Epileptiform and Vertiginous Attacks associated with Laryngeal Spasm and Irritation.*

The case, a man aged thirty-eight, was shown at the March meeting of the Society as a case of paresis of both vocal cords of doubtful origin, but no definite opinion of its cause was expressed at that meeting. At that time it was not known that he had had any attacks of giddiness.

On April 7th, while assisting in loading a barge, he felt queer in his head, gave a cough, and fell head over heels into the barge, striking his head in falling. He remained unconscious for an hour and a quarter. (Probably the length of unconsciousness was due to the blow received while falling.)

He has had in all six attacks of unconsciousness, each immediately preceded by a feeling of constriction in the throat, with inspiratory whoops and deep coughs. He has remained unconscious (except when he struck his head) for two to six minutes each time.

At different times the abduction of the cords has been very feeble, and he has suffered from marked stridor, and the question of tracheotomy has been discussed. At the meeting, however, the cords moved fairly well.

There are no signs or symptoms of locomotor ataxy, and examination of the chest gives no hint as to the cause of the paresis.

Dr. BEALE questioned whether the infantile shape of the epiglottis, to which attention has recently been drawn in cases of infantile laryngeal spasm, had anything to do with the stridorous attacks.

Drs. HILL, SPICER, and THOMSON also briefly discussed the case.

Dr. EDWARD LAW. *Case of Pharyngo-mycosis.*

The patient was first seen December 13th, 1897. She complained of her throat aching, and of the sensation of crumbs and roughness in swallowing, which sometimes produced a feeling of sickness; occasionally of a disagreeable taste in the mouth, but never of an offensive smell. She had never used her voice excessively, and her teeth were in

a most satisfactory condition. She considered her general health to be good.

In September she lost her voice for a few days after bicycling a long distance, and a week later noticed throat irritation with numerous white patches and excrescences upon the tonsil, which she attributed to having eaten bad oysters. Her doctor, who scraped the tonsillar crypts, applied various antiseptic remedies, and prescribed suitable gargles and tonics. The outgrowths quickly returned after removal. On examination the tonsils were found to be large and covered with numerous white patches, which varied considerably in size and shape. With the laryngeal mirror, numerous excrescences could be seen between the tonsils and anterior pillars to pass to the side of the tongue, and resembling in appearance rows of small incisor teeth. The lingual tonsil was largely developed and studded all over with white elongated projections, especially at the sides. A few very small isolated points could be recognized in Rosenmüller's fossa, on the posterior lip of the left Eustachian tube, and three or four white dots were also visible on the posterior pharyngeal wall.

The galvano-cautery was very freely applied on several occasions to both tonsils after curetting away the soft but firmly adherent masses; various antiseptic pigments and gargles were employed, and iron and arsenic given internally. No improvement was noticed from the local and constitutional remedies, so the patient was sent to Margate for ten weeks in order to get away from a damp bedroom, and to be placed under the best climatic surroundings.

She returned in excellent health, but with only slight improvement in her throat symptoms.

Since her return to London the local trouble has greatly improved, although absolutely no treatment has been employed.

Dr. Waggett has very kindly made the drawings which were handed round, but these sketches unfortunately only represent the condition after great improvement had taken place.

The case is interesting on account of the great number and extent of the excrescences, and as showing the inefficacy of the treatment employed.

Dr. HERBERT TILLEY strongly recommended a solution of salicylic acid in absolute alcohol (salicylic acid one part, absolute alcohol four parts) for these cases. He had recently tried it in two cases in which other remedies had entirely failed, and in which the general health was good; and from the rapid improvement noticed he concluded that the latter was due to the application, and not to a natural cessation of the disease. The preparation is a strong one, and should be used cautiously; it whitens the surface to which it is applied, producing an appearance similar to that of the galvano-cautery. Small surfaces should be dealt with at a time, and the comparison of such a surface with that which has not been treated would, he thought, quite convince members of the efficacy of the application. Where possible a probe tightly wrapped round with wool and dipped into the solution should be screwed into the crypts from which the white masses protrude.

Dr. GRANT said ~~that~~ such applications were also useful in pachydermia of the larynx.

Dr. WILLIAM HILL said that, considering the nature of the disease, we might *à priori* expect salicylic acid to be useful, as in keratinous growths in other parts of the body, *e.g.*, corns, warts, etc.

In reply Dr. LAW stated that he had only read Dr. Kelly's very valuable paper on keratosis pharyngis after cauterizing the tonsils, otherwise he would have had sections made in order to examine the cornification of the epithelium of the crypts. Remembering the usefulness of boric acid in alcohol in cases of otomycosis, he tried it in this case, but without success. He would try salicylic acid in absolute alcohol, but would hesitate to rub into the lingual tonsil such a strong solution as one in eight.

The following report has been received of a small piece which was recently punched out of the tonsil :—"The sections show sufficient to confirm the statement that the crypts in the mucous membrane are filled with keratinized epithelium. The adjacent submucous tissue is unduly vascular, and shows round-celled infiltration."

Mr. SYMONDS. *Syphilitic Ulceration with Perichondritis of the Larynx.*

The patient is a man aged thirty-five. The disease was confined to the left side, and appeared chiefly as a thickening with an outgrowth about the site of the ventricular band. There was a four months' history of hoarseness, and a well-marked syphilitic scar on the neck and chest.

Mr. SYMONDS. *Case of Sessile Fibroma of Vocal Cord.*

Mr. MORLEY AGAR. *Frontal Sinus Disease.*

Patient was a man aged twenty-seven, who for a year had suffered from pains and a "cold sensation" over the lower and middle part of the frontal region. There were no objective symptoms beyond some hypertrophic rhinitis. This had been treated several times with slight relief. However, there still remained some nasal obstruction on both sides. Iodide and mercury had been thoroughly tried on the suspicion that the frontal symptoms were due to a syphilitic periostitis, but without result. Phenacetin or antipyrin did not give even temporary relief. The case was shown to obtain the opinion of members as to the justifiability of exploring for an exostosis, or as to the propriety of treating the hypertrophic rhinitis more energetically, on the supposition that the symptoms were due to exhaustion sinusitis. The patient suffered so much distress that he was anxious for something to be done.

Mr. CRESSWELL BABER did not think that there were any distinct signs in this case of abscess in the frontal sinus.

Dr. HILL thought it was a case of exhaustion sinusitis, and that there was no indication for opening the frontal sinus.

Mr. R. LAKE. *Section of Tubercular Epiglottis removed by the Galvano-cautery Snare.*

The epiglottis in this case was removed in the manner indicated in the title for two reasons ; its extreme vascularity, and on account of its

very horizontal position. It healed well, there was neither primary nor subsequent hæmorrhage, there was immediate relief to dysphagia, and one was able to see definitely the extent of the diseased surfaces, and apply treatment with better prospect of success. Tubercle bacilli are scarce in the sections, and not to be found in all. The sections were cut by Dr. Cobbledick.

In reply to Mr. BUTLIN, the piece was about a third of an inch in thickness at its base, but was all cut up and destroyed in section cutting.

Mr. LAURENCE for Mr. BUTLIN. *Case of Subglottic Swelling.*

C. M., aged fifty-five, has had "throat trouble" since Christmas, 1896. Some ill-defined attack of dyspnœa in July, 1897. Since then more or less hoarseness of voice and noisy respiration.

Condition in January last, 1898: both vocal cords white, the right cord very limited in motion. A pinkish subglottic swelling on each side, greatly narrowing the opening into the trachea. Some pain radiating to the right ear, and also involving the left side of the chest.

This condition has continued with very little variation to the present time. The patient is not losing flesh or strength, and she was shown with a view to diagnosis.

Mr. SPENCER said it was a case of malignant disease, and that some glands in the neck were becoming infected. As in his case, there was no ulceration of the subglottic swelling, but soft, breaking-down glands were found over the jugular vein. The appearances in the two cases were almost identical.

Sir FELIX SEMON and the PRESIDENT said that they could not convince themselves of a tumour being present, and thought that possibly some chronic perichondritis with chronic laryngeal inflammation would account for the appearances. Iodide of potash and Leiter's coil were recommended.

Dr. BENNETT. *Paresis of the Right Divergents of the Larynx.*

Mr. J., aged forty-five, complained at the end of 1895 of a feeling of weakness in the larynx after any use of the voice.

He attended a few times at a London hospital, but no weakness of the muscles was noted at that period. In May, 1896, I found the right half of the larynx irregular in its movements; one moment it would remain stationary during inspiration, and the next it would move, but more sluggishly than the left half. Faint sibilant rhonchi were occasionally noticed at the right apex, but nothing else abnormal. In June the right half remained completely stationary.

Although there was no history of syphilis iodides were given for some time. Before the end of 1896 the movements had again become complete, though somewhat sluggish. During this period of recovery it was interesting to note that marked changes occurred in the course of an examination, as if the nerve could only permit the stronger impulses to pass, whilst the ordinary inspiratory efforts were not sufficient to affect the contraction of the muscles. During 1897 he felt perfectly well, and called to see me recently to say that he was quite better. I found the

right half of the larynx again stationary, but this condition is now once more passing off. No intrathoracic growth can be detected.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.

Friday, April 29th, 1898.

DUNDAS GRANT, M.D., F.R.C.S., *President, in the Chair.*

Dr. BARCLAY BARON (Bristol) showed a case of *Cyst of the Epiglottis* in a gentleman of middle age.

There were practically no symptoms present—merely a tendency to “hawking,” which was probably due to elongation of the uvula. There were two cysts on the lingual surface of the epiglottis: one about half an inch across, covered with thick mucous membrane with dilated vessels on its surface, and another about the size of a pea.

Dr. Baron asked the Fellows present whether they agreed with him that there was no need to operate until symptoms occurred to demand interference. If they disagreed with him in this expectant treatment, then what would be the best operation to perform.

Dr. WYATT WINGRAVE thought that its steady growth and its appearance was suggestive of a solid nature; did not think its position favourable to removal by snare or forceps, but advised puncture chiefly for diagnostic purposes.

DRS. WHISTLER, STOKER, VINRACE, BROWN KELLY, and DUNDAS GRANT also discussed the question of operative interference, the general opinion being in favour of leaving the case alone, unless symptoms should manifest themselves.

Mr. WYATT WINGRAVE also showed a case of *Cyst of the Epiglottis*.

Dr. BROWN KELLY¹ (Glasgow) read a paper on *Cysts of the Floor of the Nose*.

Mr. WYATT WINGRAVE congratulated Dr. Kelly upon his interesting histological section of a region not generally studied. Whilst admitting the reasonableness of Dr. Kelly's suggestion that these cysts arose in the glands, he felt that we must not overlook the existence of the canals of Stenson and Scarpa—old oro-nasal channels of communication—and also the presence of Nicolson's organ. Any of these structures might be the seat of cysts. It was a region rich in vestiges.

Dr. WYATT WINGRAVE showed a woman, aged sixty-six, from whose right vocal cord a *Fibroma* had been removed six months previously with a Krause's snare. There had been no return. He also showed a similar case in a man aged thirty-eight, where a *Fibroma* had been partially

¹ For full report see June number of the JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY, 1898.

removed from the right vocal cord by Dr. Dundas Grant's laryngeal cutting forceps. The structure was an angio-fibroma, and recurrence was taking place.

Dr. DUNDAS GRANT showed a case of *Malignant Disease of the Left Tonsil* in an elderly woman.

Notes of Three Cases of Lupus in which the New Tuberculin was employed. By LENNON BROWNE and WYATT WINGRAVE. (Read by Mr. WINGRAVE.)

Case 1.—Mrs. H., aged thirty-five, was first seen by Mr. Lennox Browne on January 13th, 1898, in consultation with Dr. Sinclair White, of Sheffield, on account of severe hoarseness which at times degenerated to complete aphonia. No pain was experienced in speaking, and there was no difficulty in swallowing, no regurgitation of fluids, no sense of suffocation, nor distress of any kind. The sole complaint was the loss of voice with accumulation of phlegm, which would disturb her sleep and occasion some cough to clear away.

The *history* first given was that the vocal disorder had arisen about two years previously, but that three or four years prior to that the voice had been affected and the throat sore after an attack of influenza. On still more closely questioning, after examination was completed and the diagnosis determined, it was elicited that some eight or nine years before her present visit the patient had suffered from lupus of the *alæ* of the nostrils. This had healed under treatment, leaving but very slight scars, and the matter had quite escaped the memory of both the patient and her husband. There was no history of tuberculosis in the family, but the patient had suffered from suppurating cervical glands as a child. Her only child, a girl aged eleven, is in good health. There have been no miscarriages.

On examination the left pillars of the fauces were thickened, red, and raw, with several minute ulcerations resembling true tuberculosis as we see it in this situation. With the *laryngoscope* there were observed the following conditions:—

1. Considerable overgrowth and ulceration of the left lingual tonsil.
2. Great nodulation, overhanging, and characteristic winglike lateral extension of the epiglottis.
3. Diminution of the glottic space in full inspiration to at least a third of the normal, due to much supraglottic nodular infiltration, and this was seen to extend below the glottis. The vocal cords were not visible. The aryepiglottic folds were somewhat infiltrated, but not ulcerated. The whole of the mucous membrane was of a dull, but not deep red, colour.

Treatment in this case consisted in the removal of considerable and numerous nodules of tissue from the lingual tonsil and epiglottis with the cutting forceps recommended by Schultz for pharyngeal adenoids. This was varied by curettement of the faucial pillars and of the laryngeal cavity, and by removal from the last-named site of several pieces of lupous tissue by Gibbs's snare, Krause's forceps, and Heryng's knives. Cocaine was always first applied, and each surgical operation

was followed by the vigorous application of lactic acid (eighty per cent.) with firm friction. One or other of the procedures just described was employed almost daily for six consecutive weeks. Concurrently injections of the new tuberculin (of Libbertz) were made. These were not commenced till February 2nd. The first dose was equivalent to one five-hundredth of a milligramme of the solid substance. The reaction, as indicated by the thermometer, was not great, for the variation rarely exceeded two degrees in the twenty-four hours, and ranged just above and somewhat below the normal. The daily elevation always occurred about six in the evening, and subsided about nine to ten. When the patient left London at the end of six weeks the improvement was marked in every respect of physical appearance, and a day or so after her return home the voice was quite restored. She has been seen for two consecutive days each week or so since, the larynx being curetted the first day with lactic acid, and an application of the acid only on the second. In case of speaking, clearness and strength of voice, the improvement is continuous. There is no longer cough nor expectoration.

The weight, which was somewhat reduced in the early days, is now more than regained, and the health is much better. As to the tuberculin, although, as stated, the temperature variation was but slight, the patient was somewhat upset by the injections, so that they had to be frequently discontinued, and not more than twenty-five in all were given. When the amount injected represented one milligramme there was great disturbance and fever, the thermometer marking 102° F. The site of the injection was highly inflamed, and bore a strong resemblance to a lupous scar in an active state. This treatment has now been discontinued altogether. It cannot be said that the tuberculin has exerted any beneficial influence. In this opinion Mr. Wingrave, who has seen the patient several times, concurs.

Case 2.—Lilian G., aged fourteen, was admitted to the Central London Throat and Ear Hospital on the 31st day of January, 1898, under the joint care of Mr. Lennox Browne and Mr. Wingrave, who had seen her as an out-patient.

The child was the third of a family of seven, all of whom, as well as her father and mother, are alive and well. She had suffered from no illness except measles and mumps, both some years previously.

The complaint was of hoarseness, and, indeed, of almost loss of voice, which had existed for about eighteen months. Whatever voice there was was of very low pitch and weak in tone. There was neither pain nor distress in performance of any function of the throat.

The local condition was as follows :—Some redness and nodulation just inside the *nostrils*, but no external signs on the face or skin. Several small scattered patches of lupus on the soft palate, and markedly on the *uvula*, which was thickened, and also on the left *anterior faucial pillar*.

On the right side of the *tongue*, just behind the boundary of the pharyngo-glossus, was a raised granulated patch of hard consistence and about the size of a fourpenny piece. With the *laryngoscope* the *epiglottis* was seen to be thickened, nodulated, overhanging, and extending laterally as in the last case. The *left ventricular band* was infiltrated

and nodulated, the coverings of the *arytenoid cartilages* were also infiltrated, and there was a marked and somewhat isolated swelling at the *posterior commissure*.

Injections of the new tuberculin were commenced on the 1st of February, the initial dose representing one five-hundredth of a milligramme of the solid substance. Beyond a variation of temperature, which ranged from 97° F. at the fall to under 100° F. at the rise, there was no reaction till after the eighth injection, when complaint was made of excessive urination and an occasional feeling of hot flushes ; but there was neither headache, sweating, nor rash. After the second week, although the doses were increased, the temperature did not rise above 99° F. In the fourth week it was even less. Then in the fifth week it rose for about three days, and on one occasion the thermometer marked 99° F. The day before it was 99·4° F., the day after 99·6° F. ; but no reason could be given for the event. After that, till the date on which the treatment was discontinued, there was little change, and indeed the patient became so habituated to the drug that with two, three, or four milligrammes the thermometer often barely ranged above or below normal. In all, fifty-two injections were made. The elevation of temperature was always at 6 p.m., the decline commencing about 10 p.m.

No *local treatment* was adopted until March 14th, when thirty-eight injections had been given. On this occasion and on seven others the fauces and larynx were scraped, with after-applications of lactic acid, which were also employed alone subsequently. When discharged on the eightieth day there was some slight improvement in the throat, but far less than is often observed by surgical procedure alone. The voice was no better, but she had gained three pounds in weight.

Case 3.—William U., aged fourteen, was admitted into the Central Throat and Ear Hospital on the 8th day of February, 1898, under the care of Mr. Lennox Browne, conjointly with Mr. Wingrave, under whose observation and treatment the boy had been for six years past.

The patient, an only son, was of posthumous birth, his father dying two months previously of phthisis. His mother is still alive and in good health.

The cartilaginous portion of the nose was much swollen externally, and it, as well as the cheeks on each side, presented the "apple jelly" characteristics of lupus. In addition his nostrils were both obstructed by lupus nodules, whilst at the *alæ* of the right, and just between the left nostril and the upper lip, there were small areas of active ulceration. Fauces and larynx were healthy, nor was there any other manifestation of lupus. The boy was stated to be in good health, but is very small for his age.

Injections of the new tuberculin—the first dose being equivalent to one five-hundredth of a milligramme—were at once commenced and continued daily. On the tenth day the nose was thought to be paler. Not till the twenty-fourth day, when the dose represented one-fifth of a milligramme, was any other treatment adopted. At this date the nose was scraped and lactic acid was applied. This procedure was repeated at intervals on five subsequent occasions. Meantime, with occasional intermissions, the tuberculin injections were

pursued until the amount represented an equivalent of four milligrammes of the solid substance. Fifty doses in all were administered during the seventy days of residence in the hospital. At the end of this time the patient was discharged, the unanimous opinion of all who had taken share in the charge of the case being that the effect of the treatment on the disease was absolutely negative. Mr. Wingrave, indeed, reported that he had seen more pronounced changes during the time he had watched the case under ordinary analeptic measures and simple dressings. The only thing that could be said in favour of the tuberculin was that it had done no harm. The average highest temperature was under 100° F. ; three times it exceeded this, and once reached 101°. The lowest temperature was 97°, and it was always subnormal at its fall. Whatever time of day it was employed the highest elevation was at about 6 p.m., and the decline before 10 p.m. The boy suffered from some local pain at the site of the injection, but from no other inconvenience. Indeed, his general health rather improved, and he had not lost weight, but that was probably due to the good food and care of the hospital.

Remarks.—It has been more than once suggested in this Association, and it is reported that Mr. Malcolm Morris is of the opinion, that in spite of the many serious disadvantages which led to its removal from practical pharmacology, the old tuberculin assisted in the success of surgical procedures for the cure of lupus.

The introduction of a new form of tuberculin, which is claimed to be active for good, but innocuous to the system, suggested to us the trial of which the results are recorded to-day.

Its administration in the first case was too intermittent and the injections too few to warrant any supposition that it assisted in the success of active surgical procedures.

In the other two cases the drug was administered for a considerable time before any curettement or lactic acid application was employed. The very negative effects of its administration did not justify us in continuing the injections, and we trust that the Fellows will agree that a fair trial was given to the drug. It will be observed that we commenced with the minimum dose of one five-hundredth of a milligramme as recommended, and that we gradually increased this to four milligrammes. It may be mentioned that twelve milligrammes is the maximum for an adult advised by Koch.

Discouraging as the results are, we have felt it our duty to place them before the Association.

As we have already indicated, it is to the merit of the new tuberculin that, although powerless to afford benefit, it appears to be equally negative to harm.

One of us gave a fair trial to the old tuberculin, of which two cases have been recorded of benefit ; but the results in others of the series were more or less disastrous, partaking indeed of the generally unfavourable experience of its action.

Dr. DUNDAS GRANT cited a case of *Lupus of the Cheek*, shown by Dr. Heron at the Clinical Society, where healing had resulted from the injection of new tuberculin.

Mr. STGEORGE REID showed for Dr. YONGE a new *Laryngeal Auto-Insufflator*.

Dr. STOKER showed a case of *Rodent Ulcer of the Nose*, and a case of *Lupus of the Face*, treated by the "sun" cautery, or concentrated sun's rays. He pointed out that two objects were contemplated in the treatment of such cases : (1) to destroy the micro-organisms which were believed to give rise to tissue diseases ; (2) to grow new and healthy tissue which would be better able to resist any future pathological encroachment. Oxygen had been used in these and other cases previously shown at the Association meetings to accomplish the latter object, but he had not found the usual methods altogether satisfactory for the former purpose. He explained that he had made observations as to the penetrating effects of concentrated sun's rays on raw meat, and their destructive power on micro-organisms buried at various depths in the same ; these observations led him to hope for good results from this method in cases like those now shown, and so far his hopes had been realized, and he trusted to be able to show the cases cured later on. Mr. Stoker explained his method of applying the rays, and said at present he used a four-inch bi-convex lens, with a focus of four inches ; but that he understood a quartz lens would perhaps give better results.

Dr. STOKER showed a patient, a girl seventeen years of age, who had had *Ulcers on Each Side of the Neck, below the Angle of the Jaw*, the result of suppurating cervical glands. The ulcers had existed for some years, and were supposed to be lupus, but he doubted the accuracy of that diagnosis. This case was treated with oxygen by means of a simple apparatus. The ulcers were now healed, and there was no sign of the puckering or contraction that usually arises in such cases ; the cicatrix was even and vascular, and the margins were the colour of the surrounding skin ; but he believed, judging from experience of other oxygen cicatrices, that they would soon lose all redness, and that there would be no disfigurement.

Dr. VINRACE wished to know whether there was any specific effect in the sun's rays other than heat.

Mr. WYATT WINGRAVE questioned Dr. Stoker's explanation that the sun's rays killed the micro-organisms of lupus and rodent ulcer. The existence of specific organisms in these diseases not being proven, the results could scarcely be attributed to disappearance of staphylococci and other common forms, which he claimed to have brought about by the treatment.

Mr. STGEORGE REID said that the interesting point in the claim that Dr. George Stoker made for this form of cautery was that the concentrated rays of the sun had a very considerable power in penetrating tissue, and that in such diseases as lupus, etc., due to micro-organisms, you had therefore a very important bactericidal agent assisting in the treatment. Mr. StGeorge Reid thought it was rather to this than to any new cauterizing development we should look to an advance in the successful treatment of lupoid ulceration by this method. If, as Dr. Stoker claimed, we were able to flood the whole of the diseased tissue

with the sun's rays, we called to our aid a most valuable auxiliary in the inhibitory action of light on the growth of bacteria, and one which did not interfere with any other form of treatment being persevered with.

OTOLOGY.

Dr. DUNDAS GRANT showed several cases of *Cortical (Non-Radical) Operation on the Mastoid for Acute Disease*. Those occurring in adults made rapid and complete recoveries. In one recent case, in a boy who was badly fed, healing had been delayed; in another there was bilateral necrosis of the mastoid in a tuberculous child, and in this one also a further operation was to be carried out.

Dr. DUNDAS GRANT showed also a case of *Hæmorrhagic Myringitis* occurring suddenly in a woman who was a few months past her menopause.

Dr. DUNDAS GRANT brought forward several cases of *Chronic Dry Catarrh of the Middle Ear of the Sclerotic type*. These had resisted the usual methods of treatment, and he had tried the effect of *mechanical vibration applied to the dorsal spine*. Under this "indirect massage" of the tympanic structures (presumably of the stapedio-vestibular articulation) considerable improvement had taken place, as was shown by several of the cases presented.

Mr. WYATT WINGRAVE was able to confirm the statement that sclerotic cases experienced relief after cycling, but that cases of nerve deafness were made worse.

He had observed that closing the meatus with the fingers considerably increased the sensation of vibration in the ears.

Dr. PEGLER and Mr. WAGGETT also remarked on the cases.

Mr. WYATT WINGRAVE exhibited a specimen and described three cases of *Cystic Cholesteatomata of Auricle*, as follows:—

During the past year I have seen three examples of this growth, which is interesting clinically as well as pathologically. The first case, under the care of my colleague (Dr. Holloway), was that of a man who complained of a swelling of the auricle of several years' duration, which caused him occasional pain. It had the appearance of an irregular, ill-defined swelling, involving the helix and anthelix with their fossæ. It was diagnosed as a hæmatoma, but on incision some clear fluid escaped, followed by a smooth caseous nodule on squeezing and scraping. Healing and obliteration were not complete until after nearly three months' treatment.

The second case, under my own care, was that of a young man who complained of a swelling of the right ear of six months' duration. There was an irregular resilient swelling, without any redness or pain, in the helicine fossa of the right auricle. It had every appearance of a hæmatoma, and this view was supported by the history of a blow. An incision let out some clear fluid, but on scraping the interior a pearly white mass was removed, which showed glistening scales under the microscope. The sac was scraped freely, mopped out with strong solution of carbolic acid, and healed in six weeks.

The third case was that of an infant under Dr. Dundas Grant's care. It was brought to the hospital for a swelling on the back of the ear, dating from birth. On examination a cystic swelling, containing a beanlike nodule, was seen and felt on the posterior aspect of the auricle, which was thin and flattened by pressure. Dr. Grant dissected out the cyst, which was about the size of a pigeon's egg, and the wound healed in a few days. On opening it, about sixty minims of a clear, yellow, watery fluid escaped, exposing at the bottom an oval, pearl-like mass attached to the capsule. This caseous-looking mass was found to consist of densely packed epithelial squames, with cholestrin crystals and amorphous granules. The nuclei of some of the cells were only stained with difficulty, whilst the majority not at all.

The thin capsule consisted of fibrous tissue, lowly vascular, and lined by stratified squamous epithelium.

I venture to interpret this and the two preceding cases as examples of true cystic or encysted cholesteatomata. They probably commenced as aberrant epiblastic cells, which, multiplying for a short time, eventually died and became encysted. They correspond with the pearl tumours of Virchow, and the somewhat misnamed sebaceous tumours of Toynbee.

In some respects they are strongly suggestive of the cholesteatomatous masses occurring so often in the temporal bones which were considered by Lucae and Volkmann as new growths. They must not be confounded with sebaceous cysts, nor with sebaceous degeneration of accumulated inflammatory products.

Beyond their clinical interest there is also the support which they afford to the views of Volkmann, Lucae, and those who believe true cholesteatomata to be neoplastic in origin.

Mr. ATWOOD THORNE exhibited for Dr. WM. HILL a patient having a *Congenital Fissure of the Auricle*.

HUNGARIAN LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

29th March, 1897. ("Monats. für Ohrenheilk.," Jan., 1898.)

The PRESIDENT, Herr VON NAVRATIL. *A Case of Osteoma Frontis.*

G. S., labourer, aged twenty-six, noticed, three years ago, a little hard swelling in the middle of his forehead. It was at first about the size and shape of a shirt button, but steadily increased. At present, in the middle of the forehead, just between the eyebrows, is a hard bony swelling as big as a fist. The surface of the swelling is uneven, but the skin over it is natural in appearance and freely movable. Above and to the right is another swelling, soft, fluctuating, with a concave margin, and containing reddish, turbid, serous fluid, with numerous leucocytes, mucin, and propepton. It seemed as if the primary swelling, springing from

the anterior plate of the frontal bone, had compressed the duct of the frontal sinus, causing retention of secretion. At the operation, however, it was found that the fluctuating swelling did not communicate with the nose. The presence of the propepton was not explained. Latterly the growth had increased rapidly, and caused pain, so that it was possibly a sarcoma.

Herr ISRAËL. *Case of Pemphigus Laryngis.*

The patient, a poorly nourished woman of forty-two, gave a history of six weeks' illness. Her attention was directed to her throat by stabbing pain in the larynx on swallowing. This increased so that she could take little food. The gums are swollen and spongy, and bleed at a touch. The pharynx is injected. The epiglottis is bent like the spout of a jug; its free edge is injected and swollen. On the point of the epiglottis there is a spot about as big as a lentil seed, covered with a yellowish white coating; on the left side a bleb of about the same size, with clear watery contents, reaches from the anterior surface over the free edge to the posterior surface. False cords reddened, slightly swollen. There is no rash on the skin of the body, but on the labia majora are numerous vesicles, from the size of a millet grain to that of a lentil seed, with clear watery contents. There are also larger superficial erosions with yellowish white base. On the under surface of both thighs are numerous closely placed, roundish, brownish, pigmented spots, no doubt the remains of vesicles. The history and clinical picture, and the shallow erosions which heal without scarring, show the disease to be pemphigus. The characteristic appearances may be developed in the larynx without any changes taking place in the skin, or on other mucous membranes. The disease is chronic and the prognosis bad, as it occurs chiefly in cachectic subjects. Arsenic and tonics may be given, and cocaine applied locally to relieve the dysphagia.

Herr ZWILLINGER agreed with the diagnosis, although the appearances were not absolutely characteristic. Cocaine gave only temporary relief.

Herr ISRAËL stated that he could not have made the diagnosis unless he had seen the case twenty-four hours before. He promised to exhibit it again when a fresh eruption occurred.

William Lamb.

ABSTRACTS.

MOUTH, &c.

Goodale, J. L. (Boston).—*On the Absorption of Foreign Bodies through the Fauical Tonsils in Man, with reference to the Origin of Infective Processes.*
 "Archiv für Laryng. und Rhin.," Bd. VII., Heft 1.

B. FRANKEL, in 1895, drew attention to the frequency with which an acute lacunar tonsillitis is produced by an injury or an inflammation of the nasal

mucous membrane. From this observation, as well as for the theoretical reason that a direct infection of the tonsil through its epithelium against the escaping stream of lymph and leucocytes is associated with difficulties, he concluded that, in these cases at least, the acute lacunar tonsillitis is caused by a primary infection of the nasal mucous membrane, which is conveyed to the tonsils by way of the lymph stream. His histological investigations demonstrated the presence of bacteria in both the tonsillar tissue and the crypts.

The first point to be settled in examining this hypothesis is as to whether the tonsils are capable of taking into their substance foreign bodies which come into contact with the mucous membrane. Although an absorptive capacity is commonly ascribed to the tonsils, this has never been experimentally proved.

The great difference between the mucous membrane on the surface of the tonsil and that lining the crypts led the author to assume that any absorption that might go on in these glands would take place more readily through the latter. He therefore carried out the following experiments:—

Foreign bodies were placed in the crypts of tonsils which were more or less hypertrophied, and which therefore had to be removed. After these bodies had remained a certain time in the crypts the tonsils were excised, and a series of sections cut out of the tissues surrounding the affected crypts. A watery mixture of carmine was found best suited for the purpose; this was cautiously injected into the crypts by means of a blunt flexible canula connected with a hypodermic syringe.

Altogether twelve cases were examined. In two tonsillotomy was performed immediately after the injection, and in both the result was negative as regards the presence of carmine particles in the mucous membrane surrounding the lacunæ.

In one case an interval of twenty minutes was allowed to elapse between the injection and excision. Sections showed collections of carmine in the lacunæ, from which lines of the finer particles extended into the mucous membrane between the tissue cells. In places where the mucous membrane of the lacunæ was of a specially loose texture single particles penetrated some cell layers deeper. The carmine lay immediately adjoining the leucocytes that were present in the mucous membrane, and some particles were in the interior of the multinucleated neutrophile cells.

In five cases an interval of from forty-five minutes to two hours was allowed. The results were very much the same as those just recorded. The depth of penetration was proportionate to the duration of the interval and the looseness of the tissue. After passing through the mucous membrane the carmine was dispersed between the follicles. No traces were found in the interior of the follicles.

In one case there was an interval of two days; carmine was still found in the lacunæ. In two, however, after an interval of five days, little or no carmine was present in the lacunæ.

In one case, after ten days, a few carmine particles were found in the lacunæ. In the tissues the particles were arranged in more or less parallel lines; they lay in the intercellular spaces in company with the leucocytes. The latter in the carmine infiltrated region were in no way different from those found elsewhere; excepting in the neighbourhood of the mucous membrane they mostly contained a single nucleus. In their interior there was no carmine.

In all of the cases the sections were stained for bacteria. These were always abundantly present in the lacunæ, but a careful search failed to reveal them in the tonsillar tissue, excepting in the most superficial layers of the lacunar epithelium.

From these investigations the author draws the following conclusions: (1) under normal conditions, absorption goes on in the tonsils, taking place through the mucous membrane of the lacunæ; (2) the path taken by absorbed materials

is through the follicular lymph spaces, in the direction of the larger connective tissue bundles; (3) during the process of absorption the foreign bodies undergo the phagocytic action of the multinucleated neutrophile cells, which lie in and close to the mucous membrane; (4) bacteria are normally present in the lacunae, but are not usually demonstrable in the tonsillar tissue.

From the preceding cases it seems probable that the bacteria are constantly finding their way into the tonsillar tissue, but at the moment of their entrance they encounter conditions which terminate their existence.

While in some cases acute lacunar tonsillitis may originate from a primary infection of the nasal mucous membrane, the above experiments prove the possibility of direct infection from the buccal secretions.

The finding of bacteria by Fränkel in the tonsillar tissue, and even in the follicles, lends support to the former mode of origin. A. B. Kelly.

NOSE, & C.

Frohmann, Dittmar (Berlin).—*Symptomatology and Diagnosis of Acute Non-Purulent Catarrh of the Antrum of Highmore*. "Therapeut. Monats," May, 1898.

ACUTE non-purulent catarrh of the antrum of Highmore does not come often under observation. The condition, as a rule, lasts a few days. The symptoms are usually slight; when the pain is severe dental rather than medical advice is sought. This affection is scarcely mentioned in the older rhinological or dental literature. Later rhinological writers describe it as the precursor of chronic or purulent catarrh of the antrum, and consider that in every acute coryza the accessory sinuses are affected. Larniko gives a detailed description of it, and states that it frequently occurs in the different forms of acute catarrhal rhinitis. "The mucous membrane is hyperemic and considerably swollen, sometimes narrowing the lumen to a mere fissure; oftener it has a gelatinous appearance from oedematous infiltration. The surface is unevenly swollen from cysts with serous or turbid contents. Microscopically the swelling consists of round cells and serous infiltration with ecchymosis. The secretion is greatly increased—at first serous, then mucous, finally muco-purulent. It drains into the nose; if there is obstruction it accumulates and causes irritation, headache, dull pressure in the head, which may be diffuse or limited to certain parts; pains in the bone or in the region of single branches of the trigeminus." Frohmann lays stress on the presence of toothache due to affection of the nerves which run through the inflamed mucous membrane; sometimes this is absent. He describes seven cases with the above symptoms who had come for dental advice; in these the teeth were found to be healthy. The important symptoms for diagnosis are coryza, pain on pressure over the antrum (best obtained above the roots of the back teeth), toothache in sound teeth (which usually occurs early in the morning), no constitutional disturbance.

Acute pulpitis, dentine formation in the pulp cavity, alveolar abscess, and acute suppurative inflammation of the antrum must be excluded.

His cases all ran a favourable course, and were convalescent after a few days. He considers that more frequent diagnosis of this affection and observation of its progress would throw light on the etiology of empyema of the antrum in relation to nasal or dental disease. Guild.

Herzfeld, J. (Berlin).—*A Simple Method for Plugging and Simultaneously Maintaining an Artificial Opening in the Maxillary Antrum.* "Monats. für Ohrenheilk.," Jan., 1898.

HERZFELD describes plugs of pure rubber which he employs in cases of antral suppuration. The plugs are somewhat conical in shape, tapering towards the upper end, and resting at the lower end upon a rather broad but very thin sheet of rubber, which can be cut out so as to fit the teeth, and prevents the plug from slipping up bodily into the antrum. They are made in sizes of two to eight millimètres diameter to correspond with the size of the drill used in opening the antrum. The plug may be introduced at once, and causes no irritation, and patients very soon learn to take it out and reintroduce it. The length of the plugs should be about three centimètres. This is necessary, as the inner opening tends to get blocked by the growth of the new bone.

A similar plug is used for the opening from the canine fossa. It is rather more funnel-shaped towards the lower end, and the part which is pressed by the cheek against the gum is hollow. It is important in these cases to introduce the plug at once, as otherwise the opening in the mucous membrane closes much more quickly than the bone, and secretion accumulates and causes swelling under the mucous membrane of the cheek.

William Lamb.

Jordan, Prof. Max.—*Operative Removal of Fibromata from the Base of the Skull.*

THESE tumours grow from the basi-sphenoid, body of the sphenoid, inner lamelle of the pterygoid process, from the aponeurosis of the foramen lacerum anterius, petrosal occipital suture, and the fossa pterygo-palatina. They fill by further growth the naso-pharynx and accessory cavities, which attracts attention to the primary tumour, which is often without symptoms. The tumours, which are histologically innocent—sarcomatous degeneration is rare—become clinically malignant by their size or from hemorrhage. They are most frequent in the teens. It has been shown by Legouest, Gosselin, Bruns, and König that after twenty-five they have a distinct tendency to retrogressive metamorphosis, which can bring about a spontaneous cure. The importance of this for prognosis and treatment is evident, as it is possible to effect a cure by removing dangerous sequelæ during their period of growth. They may be removed by the écraseur or galvano-caustic snare, by electrolysis, lastly by extirpation through the natural or artificial openings. The possibility of spontaneous retrogressive metamorphosis is in favour of milder measures.

Bruns for several years has advised to attack the tumour, not *in toto*, but in separate parts, to prevent the growth of the pharyngeal part by repeated treatment with galvano-caustic or electrolysis, and to make the peripheral processes—especially the retromaxillary—accessible by temporary resection of the malar bone. In two cases treated in this way he achieved complete and permanent cure.

König ("Lehrbuch der spec. Chirurgie," 7 Aufl., Band I., 1898) recommends a simplification of the operative technique, and advises the removal of the tumour by long, sharp spoons, which are introduced behind the tumour after median division of the nose. In favour of this conservative course, apart from the natural tendency to cure, is the circumstance that it is impossible with any of the previous operations in use to lay bare the root of the tumour without excessive disfigurement, as well as the danger to life, with especially temporary resection of the upper jaw. In all cases where there is no occasion for hurry, and where there are no complications, one should be satisfied with simple rhinological and surgical methods. Recurrences should be repeatedly treated till the protective age is reached.

In many cases where there are dangerous sequelæ, hæmorrhage, etc., immediate extirpation of the tumour is required by external surgical methods. *Guild.*

Meyjes, Posthumus (Amsterdam).—*The Treatment of Empyema of the Maxillary Antrum.* "Monats. für Ohrenheilk.," Jan., 1898.

MEYJES describes a form of tube which he has found useful in draining and irrigating the antrum of Highmore. The tube has a metal collar fixed at right angles to its lower end, to prevent it from slipping up into the cavity. A little hole is bored in the collar and a thread of silk or caoutchouc is passed through the hole and round the crown of the next molar tooth. If no suitably shaped tooth is available, the tube must be fixed to a dental plate.

The special feature of the tube, however, is an arrangement which enables it to be opened and closed at will. This is in the form of a little hinged lid, with a spring in the hinge, so that it closes with a snap. On the inner surface of the lid is a little circular elevation or knob, which, when the lid is closed, fits exactly into the lumen of the tube, and completely closes it. The lid is leaf-shaped, and the point of it projects somewhat beyond the circular collar, so that the patient can easily open it *in situ* with the finger nail. *William Lamb.*

Rowe.—*Osteo-Periostitis of the Maxilla and Orbit in the New-Born Infant.* "Arch. Inter. de Lar.," Mar., April, 1898.

DURING the latter months of pregnancy the mother had metritis and septic vaginitis, with slight symptoms of infection. On the tenth day the infant showed redness and swelling of the right eye. Exophthalmia followed, and was well marked on the fifteenth day. The cheek became swollen, and on pressure pus escaped from the right nostril and mouth. The alveolar border was red and swollen, and was perforated on its outer side by a couple of fistulæ, discharging pus. Probing here showed the greater part, if not the whole, of the antrum to be bare. Streptococci and staphylococci were present in large numbers. The orbital abscess burst spontaneously, and on probing through the infraorbital fistula the instrument could be passed into the antrum, and out at the alveolar fistulæ. Subsequently suppuration of the lachrymal sac occurred. The whole was drained, and treated with antiseptic syringing. The local condition seemed to be clearing up, but pyæmic abscesses made their appearance on the arm and foot, and in spite of an injection of Marmoret's serum the infant died. *Waggett.*

Scheier, Max.—*Further Communications with regard to the Use of Roentgen Rays.* "Arch. Inter. de Lar., Rhin., Otol.," Mar., April, 1898.

(a) PROBING of the frontal sinus. The views of a number of authorities on this question are reviewed. The author finds that with the use of the fluorescent screen the position of the probe can be made out with certainty. In five cases he has clearly seen a shadow of the probe in the sinus, while in other instances in which he believed that he had reached the sinus the screen showed the instrument to be in an ethmoidal cell.

(b) In the study of the physiology of voice and speech it is possible to observe the movements of the tongue, soft palate, and larynx in the pronunciation of the various vowels and consonants by means of the screen. In this way the disturbing influence of indicating levers, etc., employed by previous observers, has been avoided. The results obtained by the author in the case both of the diaphragm and of the organs mentioned should be read in the original.

(c) Physiology of deglutition. A further communication will appear on this subject. It is interesting to note that in empty swallowing the elevation of the palate is greater than in the swallowing of food. *Waggett.*

Taptas.—*Hypnotic Suggestion in a Case of Nasal Stenosis.* "Rev. Hebd. de Lar., Otol., Rhin.," Jan. 29, 1898.

THE case of a woman of nineteen, the subject of chronic constipation, pelvic troubles, and nasal stenosis. Examination of the nose showed enlargement of the middle turbinates, particularly at the posterior extremity. The signs and symptoms of nasal stenosis and mouth breathing were present, and seemed to have existed for more than twelve months. Previous to the examination of the nose the patient had for several days been hypnotized, with a view of curing the constipation by suggestion. On the occasion of the nasal examination a further suggestion was made that the patient should breathe freely through the nose. After some resistance she obeyed, and after waking proved to be able to breathe quite naturally. Examination showed nasal patency to be due to considerable shrinking of the middle turbinates, which, of course, remained hypertrophied, particularly at the posterior end. The result was, no doubt, due to arterial constriction, due to vasomotor influences. The patient remained under observation ten days, during which time nasal breathing was maintained night and day. The author remarks that hypnotic suggestion may prove of real importance in the treatment of cocaine-maniacs with nasal stenosis. *Ernest Waggett.*

LARYNX.

Barnick, Otto.—*Changes in Larynx and Trachea in Leucocythæmia.* "Münchener Med. Woch.," Nos. 19 and 20, 1898.

IN many cases of leucocythæmia the changes in the larynx and trachea are inconspicuous, or are of more pathological than clinical interest; on the other hand, marked dyspnoea, or severe coughing without physical signs in the lungs or heart, may be the first indication of this disease. Diffuse swelling of the laryngeal mucous membrane, or extensive lymphatic tumours, have occasioned tracheotomy. Laryngological text-books make little or no reference to this disease. Virchow and others have described small lymphoid tubercles on the inner surface of the epiglottis, the aryepiglottidean folds, and throughout the larynx and trachea. The pathological changes in the laryngeal and tracheal mucous membrane have been well described by Eppinger.

In the parts rich in glands, especially on the epiglottis and false cords, there occurs slight catarrh, with fine tuberculated swelling of the mucous membrane. On the processus vocalis and false cords a small ulcer may be seen here and there on the top of the tubercles, which seldom are larger than millet seeds; it resembles the well-known leukæmic ulcer of the intestine, and is characterized by a trough-shaped base and prominent, pale, soft edges. Apart from a large accumulation of white blood cells in the smaller and larger vessels and their surroundings, one sees the characteristic infiltration between the acini and ducts. These extravasations, in the form of small islands, composed of well-preserved white blood cells, well deserve the name of leukæmic infarctions. These extravasations on the surface may so stretch by their growth the epithelial covering that it exfoliates.

The soft membrana propria cannot long withstand it, and the cell masses are discharged into the gland ducts. The leukæmic process, whether infarction or ulceration, is characterized by the fact that the white blood cells remain uninjured, and never show a necrotic metamorphosis.

Elstein and Mayer have reported cases where, owing to laryngeal stenosis from leukæmic infiltration, tracheotomy was required.

The author has observed three cases in Prof. Haberman's clinic in Graz. The first was a boy, thirteen years old. He was in hospital from June 25th to July 9th, 1892, with purpura; red blood corpuscles 2,562,000, hæmoglobin 45 per cent., no leucocytosis, enlargement of spleen, slight fever. On the 28th July he was readmitted for three days; slight hæmorrhage from gums and nose. September 13th, red blood corpuscles 1,800,000, white 17,000; treated outside with iron and arsenic. He was readmitted January 18th, 1893, with well-developed symptoms of leucocythæmia. On the 30th he had an attack of dyspnoea with noisy audible inspiration and barking cough, lasting for a quarter of an hour. Laryngoscopically, marked infiltration of the glottis, false cords much thickened and swollen. February 1st, rapid noisy respiration, voiceless, hoarse cough, death.

February 2nd, *post-mortem* by Prof. Eppinger. Larynx full of bloody mucus. Mucous membrane of epiglottis swollen, pale, and ecchymosed on the posterior surface; that of the false cords and sinus Morgagni is much swollen and infiltrated. Vocal cords are thickened; their mucous membrane likewise swollen, pale, and slightly granular; that of the subcordial space is in the same condition with ecchymoses.

Histological examination showed that the ciliated epithelium of the false cords was, on the whole, well preserved, although here and there single superficial cells were somewhat swollen and desquamated. Between the epithelial cells are leucocytes, mostly mononuclear; they are also found between the irregular polygonal prickle cells, and more numerous amongst the cells of the lower stratum. The blood vessels are greatly enlarged and contain numerous leucocytes, many of the capillaries being almost filled with them. Foci of infiltration are seen round numerous vessels. These appearances are less marked in the deeper layers. These changes are quite as characteristic in the mucous glands and their surroundings. Around each group, both on the surface and deeper layers, are a large collection of leucocytes, which follow the course of the interglandular connective tissue and project between the individual acini. The glands are wide and contain mucus and degenerated leucocytes. The glandular epithelium is swollen; single cells here and there have vacuoles, or are reduced by discharge of their contents to short granular-hemmed half-moons, in which the nucleus remains preserved. At the junction of the mucous membrane of the false cord and upper laryngeal space, and downwards in the sinus Morgagni, the changes are still more developed. On the projecting edge of the vocal cords the changes are slightly marked; in the deeper parts there is slight infiltration in the transversely striated muscular fibres. Here, also, it follows at first the small vessels, breaks through in streaks the bands of connective tissue, and separates the single muscular fibres.

Epiglottis and aryepiglottidean folds show the same changes, the first only in a slight degree on the upper and lateral parts. Small hæmorrhages, irregularly distributed, occur also in the subepithelial connective tissue of the epiglottis, of the vocal cords, at their transition into the sinus Morgagni, and in the deep periglandular connective tissue of the subglottic region.

The second case showed, apart from diffuse collections of leucocytes, formation of small leukæmic nodes, *e.g.*, in the glosso-epiglottidean ligament, upper section of the sinus Morgagni, and in the submucous tissue of the anterior surface of the posterior laryngeal wall under the cartilage of Santorini. These, except the last, were visible macroscopically. They were limited in the epiglottis and sinus Morgagni to the subepithelial tissue. Their structure was similar to adenoid tissue; leucocytes were more numerous in the centre; towards the periphery there was a tolerably regular connective-tissue reticulum. On the summit of single nodes the

epithelium was diminished or wanting; in consequence, small superficial ulcers were formed.

The third case showed a pale, thickened, granular mucous membrane in the larynx, and about the middle of the right vocal cord a two to three millimètre large hæmorrhagic ulcer. The mucous membrane of the trachea exhibited nodes in some parts arranged in rows, in others single, the larger of which showed small openings on their summits. They were soft, white, and showed here and there in the recent state a dark areola. Of special interest were the pathological changes on the edge of the vocal cord. About the middle of the right vocal cord the proper pavement epithelium was wanting to the extent of two millimètres. The covering layer was sharply defined with incurved edges. This defect was situated on the top of a round node, which consisted of well-preserved—only in part in the superficial layer—degenerated leucocytes. This small lymphoid tubercle was surrounded on all sides by hæmorrhagic tissue, which perpendicularly reached to the muscle layer. The lengthy duration of this hæmorrhagic infiltration is shown by the state of the fibrinous part of the extravasation, which is in the form of a regular network of hyaline-looking trabeculæ. In the meshes lie red blood corpuscles, mostly degenerated, some remains of leucocytes, and, in addition, cut vessels filled with freshly coagulated fibrin. This hæmorrhagic areola extends to a considerable distance between the subepithelial and elastic tissue layer. The tracheal ciliated epithelium is mostly exfoliated, the basal membrane preserved. The nodules extend on one side to the free surface, bulging the basal membrane convexly and thinning it externally; on the other side they extend to the inter-tracheal tissue.

With regard to these changes, the most interesting is the leucocythæmic infiltration of the laryngeal mucous membrane. The formation of nodules is important clinically, either from their size or from ulceration with formation of pus. Extensive inflammation in the soft parts or cartilaginous framework may be a source of danger. If the nodules are on exposed parts they readily break down and form ulcers. Hæmorrhages are to be frequently expected from the ulcers. More important clinically is the diffuse infiltration of the larynx and subcordial space. The more developed laryngeal changes seem usually to develop a few weeks before death; infiltration of the larynx may be very rapid. Under what conditions there is more tendency to formation of nodes or infiltration, and in what percentage of cases laryngeal changes occur, has not been settled.

Guill.

E A R.

Alt, F. (Vienna).—*A Contribution to the Pathology of the Auditory Cortical Centre.* "Monats. für Ohrenheilk.," Jan., 1898.

ALT describes an interesting case of crossed cortical deafness. Few cases have been observed. In the majority of recorded cases no exact examination of the ear was undertaken; the methods were inefficient, and conditions really physiological attributed to anatomical lesions in the cortex. Thus Wernicke quotes a case of Hutin's of supposed cross deafness in a man of seventy-six, who heard the watch on the right side at twenty-five centimètres, and on the left side only close to the ear. *Post mortem* a patch of red softening was found in the cortex, involving the lower parietal lobule, and the adjoining parts of the occipital and temporal lobes, and to these lesions the deafness was ascribed. Further, in

cases in which the hearing functions were examined, the examination was very incomplete.

In some instances the auditory centre has been referred to other regions of the cortex than the temporal lobe, on the strength of *post-mortem* examinations. Thus, Luys reports a case of deafness following bilateral suppurative otitis media in which the auditory nerves were greatly atrophied, and also the cuneus, the adjoining occipital convolutions on both sides, and the precuneus on the right side: and he locates the auditory centre accordingly in conformity with this result.

In the same way Strümpel, on the strength of a *post-mortem* examination, ascribes permanent unilateral deafness, with inability to localize sounds, to a lesion of the parietal lobe.

The majority of authors place the auditory centre in the posterior part of the superior temporo-sphenoidal convolution, relying upon the following facts:—

In Gowers's case of extensive tumour of the temporal lobe, the oldest part of the growth lay immediately under this convolution. Convulsions were present as an early symptom, with an auditory aura on the opposite side.

Gowers's second case was similar, but there were no convulsions.

Wilson's case. A patient, four months before death, heard a loud noise in his ear, followed by unconsciousness and convulsions. The attacks were repeated, and, *post mortem*, a tumour was found in the first right temporal convolution.

Thus, observations combine to show that the final distribution of the auditory fibres is in the cortex of the temporal lobe, either in the posterior part of the first convolution, or in the posterior two-thirds of the first and second convolutions.

The assumption is that the first temporal convolution on each side is in relation to the organ of hearing of the opposite side. On the other hand, it may be taken as proved that each auditory nerve is in connection with both temporal lobes. This is indicated by the fact, now repeatedly observed, that in unilateral disease the crossed deafness is of temporary duration, the hearing power being restored after a variable time. This explains the fact that in many recorded cases there was no deafness at the time of examination, although, *post mortem*, the auditory cortical centre on one side was found to be destroyed.

With unilateral disease one would naturally expect some loss of hearing power in both ears. Gowers assumes that only the connection with the opposite cerebral hemisphere is ordinarily functionally active.

There are a number of diagnostic points to help us in localizing lesions of the *left* temporal lobe, but in dealing with the *right* the difficulties are so great that Oppenheim thinks such a diagnosis (of tumour, for instance) is never justified.

For the diagnosis of tumour of the left temporal lobe, sensory aphasia—the expression of a lesion of the sensory speech centre—is the most important localizing symptom. This centre occupies the posterior part of the first, and perhaps also of the second, temporal convolution on the left side. The symptoms of such a lesion are word deafness, and the consequent paraphasia, agraphia, alexia (reading, writing from dictation, copying, and the reading of written matter interfered with). This clinical picture may be very considerably complicated by co-existent central deafness, which makes impossible the comprehension of spoken speech. For the localization of tumours in the temporal lobe the relation of the tumour to the motor and sensory centres and tracts, and also to the optic fibres, is important.

As regards deafness to musical sounds. According to Monakow, in lesions of the left temporal lobe this kind of deafness often accompanies word-deafness. But deafness to musical sounds may exist without word deafness, or it may be slight in comparison with the latter.

With reference to Edgreen's case, Monakow thinks that for the production of deafness to musical sounds a bilateral lesion of the first temporal convolution is of the greatest importance.

He believes, further, that the right auditory centre has to do chiefly with the perception of tones ("klänge"), while the left has more to do with the analysis of word sounds ("workklänge"). As analogous he cites the case of lesions of the third left frontal convolution causing motor aphasia, while lesions of the same convolution on the right side cause dysarthria.

From experiments upon animals Münk concludes that the anterior part of the auditory centre has to do with the perception of the higher tones, and the posterior part with the lower tones.

Before concluding that bilateral deafness is due to lesions in both temporal lobes we must see—

(1) That the symptoms proper to such a lesion are present (*see above*).

(2) That other possible causes of the deafness are excluded.

The following are the notes of a case observed by the writer in Prof. Schrötter's wards:—

P. C., aged thirty-three, cook. Has been ill three years. He went to bed quite well one evening, and awoke next morning to find himself paralyzed on the right side. He could not speak, was deaf on the right side, had vertigo and a rushing noise in the right ear. His memory of all his former life, alike of his childhood and his most recent past, was completely gone. He gradually recovered some power, first in the right leg and then in the right arm, and in the same way his speech also returned after he had *lalled* like a baby for a considerable time. Six years before the attack the patient had a hard chancre, for which he had no antisyphilitic treatment. He was a heavy drinker.

On examination: a medium-sized, strongly built man. Internal organs normal.

His intellectual condition is curiously altered. As soon as one begins to busy oneself with him it seems to put him in great spirits, and he answers all questions laughing hilariously, as if it were a great joke. (With reference to his speech it must be remarked that the patient used to express himself well in his dialect, both German and Bohemian).

He can repeat readily after one words and sentences. Shown a familiar object he recognizes it at once and uses it correctly, although he cannot name it. This excites him much; he scratches his head, strikes his chest, and, in a few instances, suddenly bursts out with the name of the object, with a loud laugh. Generally he fails to recollect the name, but he recognizes the correct name at once when it is mentioned to him.

Shown a spoon he says, "Jesus Maria! Jesus Maria! I know it, but I cannot say it." Shown a silver florin, and asked what it is, he replies, "Ten, 20, 30, 40, 50, 60, 70, 80, 90, 100 kreuzer." When asked his name-day (19th March), he first counts the months and stops at March, and he then counts the days and stops at the 19th, laughing merrily as he does so. He can say the Lord's Prayer and the alphabet, also the days of the week and the months of the year.

On trying to read he recognizes a few letters at once; with others he is obliged to repeat the alphabet from the beginning, and stops at the particular letter. Connected words he cannot read, because he has forgotten the first letters of the word before he has pronounced the last. His writing cannot be tested.

Cranial nerves.—I. to VI. are normal.

VII. Lower branch of right facial partly paralyzed.

VIII. Left ear: watch heard at three mètres (normal). Right ear: inaudible on mastoid and in front of auricle. Whispered and loud speech gave the same

result ; vibrating tuning fork C_2 on the vertex is perceived at the point of contact, and in the whole head. Rinne left +, bone conduction normal.

The large tuning fork C_2 is not heard in front of the right ear ; bone conduction on the right side is said ("angeblich") to be shorter by nine seconds than on the left side. High and deep tones are equally well heard on the left side ; on the right side nothing is heard ; C , C_1 , C_2 , C_3 , and C_4 are tried.

The remaining cranial nerves are intact, and the other symptoms are those usual in hemiplegia from cerebral lesion. Sensibility to touch on right side of body somewhat reduced ; to pain and temperature normal.

A lesion of the left temporal lobe spreading towards the cortex, and also towards the deeper parts, explains the combination of amnesic aphasia, right hemiplegia, and crossed deafness. It is probably a syphilitic endarteritis leading to thrombosis and softening.
William Lamb.

Marage.—*A Study of Ear Trumpets.* "Rev. Inter. de Lar., Otol., Rhin.," Mar., April, 1898.

THIS is part of the author's work on the study of the vowels. A variety of trumpets have been tested by photography of König's flames with a view to determine the purity of the sounds conveyed by them. In this paper is to be found the full description of the masseur-cornet (*vide* JOURNAL OF LARYNG., May, 1898), and also the details of the improved form of manometric and recording apparatus used by the author.
Waggett.

REVIEWS.

Spiess.—*Separatabdruck der Fortschritte auf dem Gebiete der Roentgenstrahlen.* Band I. The Use of Roentgen Rays in Rhinology. By Dr. GUSTAV SPIESS, Frankfurt.

THIS is a short paper illustrated with three photographs, in which the author shows how it is possible with the help of a fluorescent screen to open into the frontal sinus. He uses a drill driven by an electro-motor ; each movement of the instrument and its distance from the frontal sinus can be seen on the screen, also whether it is too far back or too far forward. The drill has the advantage that the opening can be made more anteriorly than in Schäffer's method, as the thickness of bone is of less account. Such an opening is of use in diagnosis for syringing and removing pressure symptoms ; it may be enlarged, and is in a suitable position for the patient carrying on treatment. He thinks that by opening in this way, allowing the secretion to escape, and cleansing, many acute cases will be prevented from becoming chronic. As the results of external opening are not always satisfactory, he expects that with improved instruments it will be possible through a nasal opening to curette all the recesses of the frontal sinus, and that even severe forms of empyema will be treated by rhinological rather than surgical methods. The first photograph shows a small tube passed into the opening made by the trephine.

Several points must be noted in this method. Lateral divergence of

an instrument is not shown in the profile picture. Illumination from behind, owing to the thickness of the skull, shows little. It is to be recommended, therefore, at first to introduce the trephine with direct illumination, or at least in a lighted room, and only when it reaches the bridge of the nose and is pushed under the nasal bone and comes against a resistance to darken the room and observe its position on the screen. It is advisable to place the patient's head as much as possible in profile, which is best obtained by applying a self-retaining symmetrical clip on both cheeks, which carries at its end a flat metal knob on the side next the screen, on the other side a metal ring with the same diameter. If the tube is at the same level as this clip, and the profile correctly placed, then its head will appear on the screen exactly in the middle of the somewhat larger projected ring. If the tube is in the frontal sinus, *i.e.*, somewhat higher, so the head must appear somewhat over the ring. Thus the trephine is directed straight upwards and driven by the motor towards the clear-shining frontal sinus, into which the instrument passes in a few seconds according to the thickness of the bone.

Another point to be observed is the existence of the frontal sinus. He thinks that one could hardly be deceived by the Roentgen ray image. In any case it is advisable to make a Roentgen ray transillumination both from the right and left side; eventually, if no distinct appearance is obtained, a photograph should be taken both in profile and from behind forwards. Even then, Vohsen's electrical transillumination comes into the question, that absence and suppuration of the frontal sinus will be represented by the same amount of darkness. Minute examination from the nose is most essential; probing, even controlled by the Roentgen ray image (Scheier), will only seldom be successful. Sometimes pus exudes near the probe; syringing, even when the tube has not quite reached the frontal sinus, can make pus appear; the pus may come from an ethmoidal cell. Tenderness on percussion over the affected frontal sinus, and feeling of pressure at the inner angle of the eye towards the floor of the frontal sinus, are frequent symptoms, so that after excluding the other accessory sinuses from these symptoms the subjective troubles of the patient can be attributed with tolerable certainty to disease of the frontal sinus, and at the same time its presence. Lateral enlargement is not easily represented in Roentgen ray photographs, and anatomical marks are uncertain. Therefore one must operate as near as possible to the middle line, which is also indicated by the narrowness of the anterior nasal segment, and he has the absolute certainty of entering the frontal sinus if it is to be seen on the screen. It may happen that by very asymmetrical frontal sinuses the right side may be opened from the left nostril or the converse.

Although he has only operated on three cases—one of which, owing to a slight error at the beginning of the operation, was unsuccessful—he wishes to publish the method, as he is convinced of its simplicity, quickness, and certainty; and as these cases are not seen every day the co-operation of others is required to perfect the technique in a short time. The same method may also be applied to the sphenoidal sinus. *Guild.*

Gould.—*The Year Book of Medicine and Surgery.* 1898. By G. M. GOULD.
The Rebman Publishing Company, Limited. Pp. 1077. Price 38s.

THIS book keeps in the same plane as at its start—that is, it is a clear and faithful record of the progress in the medical and surgical world. In completeness it ranks certainly second to none. But one other firm have dared so large a venture, and for well-known reasons this book took first place last year.

There are a few changes in the staff, the most noteworthy resignations being Prof. Leffman, and (from our point of view) Dr. A. H. Cleveland. In its general get-up, style, and quality, the book leaves nothing to be desired.

From a book-of-reference point of view there is but little to be desired by the most exacting; one of these points is the omission of anatomical discoveries, for these not unfrequently have an important bearing on the diseases of the part and their treatment. But against this would be placed the disadvantage of adding to the bulk of the work. This is more to be emphasized when one realizes that the editors have this year cut down the volume nearly two hundred pages.

WESTERN OPHTHALMOLOGIC AND OTO-LARYNGOLOGIC ASSOCIATION.

THE third annual meeting of the Western Ophthalmologic and Oto-Laryngologic Association was held in Chicago, April 7th and 8th, 1898. The address of welcome was made by Dr. F. Henrotin, President of the Chicago Medical Society, who in a felicitous speech extended to the members the hospitalities of the City of Chicago. Dr. A. Alt, of St. Louis, responded for the Association. The annual address was then read by Dr. B. E. Friar, of Kansas City, Mo. After the usual routine business had been concluded, a scientific communication was read by Dr. Herman Knapp, of New York City.

The Ophthalmologic and Oto-Laryngologic Sections each held five separate and two joint sessions, many articles of interest being read and discussed. The last joint session was occupied with the exhibition of clinical cases.

The following officers were elected for the ensuing year: President, Dr. J. Elliott Colburn (Chicago); 1st Vice-President, Dr. W. Scheppegrell (New Orleans); 2nd Vice-President, Dr. Casey A. Wood (Chicago); 3rd Vice-President, Dr. H. Gifford (Omaha, Neb.); Treasurer, Dr. W. L. Dayton (Lincoln, Neb.); Secretary, Dr. W. Rumbold (St. Louis, Mo.).

New Orleans was selected for the next meeting, which will take place just before the Mardi Gras of 1899.

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TREATMENT OF OZÆNA BY ANTIDIPHThERITIC SERUM.

By HOLGER MYGIND, M.D. (Copenhagen).

ALTHOUGH more than two years have elapsed since Belfanti and Della Vedova first published the excellent results they claimed to have obtained in cases of genuine ozæna by injections of antidiphtheritic serum (*see* this journal, Vol. X., p. 343), few specialists seem to have tried this entirely new treatment. All those who have given it a trial agree, however, that subcutaneous injections of antidiphtheritic serum have a decided immediate action on the mucous membrane of the nose in cases of ozæna; but while Compairé (*see* this journal, Vol. XII., p. 387), Molinié (*ibid.*, p. 387), and Lautmann (*see* "Revue des Sciences Médicales," Vol. L., p. 292) saw lasting results, Arslan and Catterina (*see* "Centralblatt für Laryngologie," 1897, p. 62), Lombard (*see* this journal, Vol. XIII., p. 206), Buys (*see* "Revue des Sciences Médicales," Vol. XLIX., p. 301), and Poli (*ibid.*, p. 961) do not seem to put much faith in this new method of treatment. Lastly, Gradenigo, who was one of the first to adopt this method, in a letter to Moure, of Bordeaux (which letter is published in the "Bulletin et Mémoires de la Société Française d'Otologie," Vol. XIII., First Part, p. 52), seems to have given up the hope of obtaining lasting results.

The reason why treatment of ozæna by injection of antidiphtheritic serum has been so little adopted cannot be that other methods of treatment of this obstinate and (to say the least) troublesome disease are to be relied much upon. Up to the present moment, the only method which can be somewhat relied upon is washing out of the nasal cavities with large quantities of water; but it is a well-known fact that the old symptoms nearly always recur as soon as the patients stop the syringing. The reason must rather be sought in the circumstance that

Belfanti's and Della Vedova's mode of treatment is founded on the theory that *ozæna* is caused by the presence of a bacillus which must be considered as a weakened form of the diphtheritic bacillus—for this theory rests on a very weak basis and will hardly be adopted by many.

When I, nevertheless, determined to try the treatment of genuine *ozæna* by injections of antidiphtheritic serum, I was induced to do so from what I had read of the effect this treatment had upon the mucous membrane of the upper air passages in cases of diphtheria. From many places where the injections were tried reports came referring to the quicker disappearance of the false membranes, and to the effect the injections had in preventing the spread of these from the pharynx into the larynx. By means of this clinical fact I was able to understand the effects of the antidiphtheritic serum on the pituitary membrane in cases of *ozæna*; and in the belief that antidiphtheritic serum had a stimulating effect on the diseased mucous membrane of the upper respiratory passages, I commenced my experiments. These were all made in the Copenhagen Military Hospital, the ear and throat department of which I have had temporarily in my charge during the last year, and where I had the great advantage of being able to take the patients into the wards and have them under daily observance.

I have treated altogether ten cases of genuine *ozæna* with subcutaneous injections of antidiphtheritic serum. Of these, seven were young soldiers aged nineteen to twenty-two, while three were girls, aged respectively ten, twelve, and fourteen years, all three being sisters, and daughters of a non-commissioned officer. I took great care only to select such cases for treatment as were pronounced and true cases of genuine *ozæna*, and in all there were present typical fœtor, discharge of crusts, and atrophy of some part of the osseous walls of the nasal cavity; besides, in all cases the mucous membrane of the nose was of the character generally described as atrophic, *i.e.*, it was pale, shrunk, and dry.

I first commenced injecting subcutaneously twenty cubic centimètres of the antidiphtheritic serum prepared in the bacteriological laboratory of the Copenhagen University gratuitously for the Danish medical profession, which serum has a strength of about one hundred antitoxin units in each cubic centimètre; repeating the dose—as is done in cases of diphtheria—a few days later. This dose was, however, soon found to be too strong, or could not at least be repeated so soon, the patients getting severe symptoms of serum infection. By degrees I found ten cubic centimètres to be a proper dose for adults and five for small children, increasing the dose now and then to fifteen cubic centimètres in adults. I also found it best to wait to repeat the dose until eight to twelve days had elapsed after the previous injection, to prevent accumulative effect.

According to the numerous experiments I have made, there can be no doubt that it is a fact that *subcutaneous injection of antidiphtheritic serum in cases of genuine ozæna has an immediate and very marked effect upon the mucous membrane of the nose*. This action generally appears towards the end of the first twenty-four hours after the injection, the patient discharging the crusts with more easiness; besides, the crusts are mixed with mucous or muco-purulent secretion. During the follow-

ing days the mucous membrane of the nose shows very marked alterations : it loses its dry and pale appearance, becoming moist and assuming a natural vivid red colour, and also swelling considerably. The colour and the swelling are very different from the colour and swelling of the mucous membrane as seen, for instance, in cases of using Gottstein's tampons or copious syringing, having as a rule not the slightest appearance of irritation. Besides, the crusts are seen to be surrounded with mucous secretion, which also appears on the surface of the mucous membrane where there are no crusts.

After this period of reaction a period of counter-reaction generally is seen, the pituitary membrane beginning to assume its red character ; but after a second or third injection—a greater number of injections might perhaps be necessary now and then—I have, in all cases observed by me, seen a lasting improvement. This improvement has in a few of my cases been only small, though distinct ; in most cases it has been very considerable, the patients having lost the fœtor and either never discharging any crusts or only discharging small ones now and then. In one case the result approached very near to complete recovery.

As I did not use any other treatment—especially no syringing of the nose (except in one case)—and as I have observed my patients from three to eight months afterwards, I do not hesitate in pronouncing that I consider *the injection of antidiphtheritic serum in cases of genuine ozæna the most effective of those hitherto known. It has, however, its drawbacks.* Amongst these I must mention the painful swelling of the skin around the place of injection, which often appears directly after the injection and lasts some days ; further, the different forms of skin eruptions, which appeared in all my cases, and of joint affections, which appeared in two cases. In all cases where the doses of injection did not exceed ten cubic centimètres the rash was, however, of no importance, and in none of these cases were joint affections observed. It is, however, to be hoped that by further experiments the undesirable effects of the injections may cease.

What is it in the antidiphtheritic serum which has this remarkable effect on the pituitary membrane in cases of ozæna? This question I have tried to solve by means of a new series of experiments, which are not completed yet, but which clearly show that *the presence of the toxins is of no importance, but that it is the serum alone which acts* ; and I may add that I have obtained results which seem as good as those mentioned by treating ozæna patients with injections of normal serum of horses.

As the serum treatment of ozæna is of both practical and theoretical interest I intend giving a more detailed description of the experiments mentioned in this article.

REPORT OF A DEATH following immediately an OPERATION FOR NASO-PHARYNGEAL ADENOIDS UNDER CHLOROFORM,

With Remarks on Chloroform Anæsthesia in this Operation.

(Abstract.)

By FRANK WHITEHILL HINKIE, A.M., M.D.

A BOY, aged eight years, was operated on for naso-pharyngeal adenoids to relieve recurring catarrhal otitis. Chloroform was administered carefully by a skilled anæsthetist. It was taken badly, with vomiting and severe glottic spasm. On account of the vomiting and incidental delays, about one ounce of chloroform was administered in all. The chloroform was removed to make way for the operation, and at that time the pulse was good. The operation occupied but a very few moments. Just at its conclusion the boy gave a few hurried, shallow gasps, and respiration and pulse ceased at once. Persistent efforts at resuscitation with continued artificial respiration were without effect. No *post-mortem* was obtained.

Chloroform has been in the past the most generally used anæsthetic in this operation, on account of its convenience and the belief that it is a relatively safe anæsthetic for children. In 1896 Dr. Holloway reported in the "Medical Magazine" of London eleven deaths under chloroform in operations on the tonsils and naso-pharyngeal adenoids. This list I am able to increase to eighteen deaths under similar circumstances that have been reported since 1892. (A brief report of seven fatal cases follows.)

Observations by Paltauf, Kolisko, and others throw some light on the causes of the mortality under chloroform in this operation. In a number of cases of sudden death from slight causes hypertrophy of the lymphoid tissue throughout the body was found, including the tonsils, lymphoid structures at the root of the tongue, and the naso-pharyngeal adenoids. The thymus gland was persistent and enlarged, and the intestinal follicles were hypertrophied. There were frequently present a dilated heart not dependent on valvular lesions, and a narrowing of the aorta and the arterial system generally. This condition, which has been called *habitus lymphaticus*, was found, amongst others, in a number of deaths during chloroform administration. People so constituted seem to have little power of resistance to comparatively slight shocks. Paltauf believes the cause of death should be sought in a constitutional dystrophy. The exaggerated development of the thymus or its abnormal persistence constitutes a concomitant symptom, as does also the hypertrophy of the lymphoid ganglions or tonsils. A result of this condition is an increased vulnerability and a particular predisposition to cardiac syncope.

We have here assigned as a cause of death under chloroform

narcosis the very constitutional condition one of whose manifestations is the hypertrophied naso-pharyngeal adenoid tissue for which we so frequently operate.

But six authentic cases of death attributable solely to the adenoid operation are on record—all from hæmorrhage, primary or secondary. Deaths due to tonsillotomy are of extreme rarity. We have then operations whose mortality is insignificant showing in less than five years eighteen deaths attributable to the chloroform administered for their performance. The conclusion seems inevitable that the use of chloroform for the removal of hypertrophied pharyngeal and faucial tissue is attended by great risks, and that chloroform should be used for this purpose only under peculiar circumstances and after careful consideration.

The brief anæsthesia usually required for the adenoid operation may be obtained in the majority of cases by nitrous oxide and ethyl bromide, or if a longer period of anæsthesia is desired we can use ether.

In conclusion, the following affirmations are submitted for discussion :

1. Statistics show an exceptionally high mortality from chloroform anæsthesia in the operation for the removal of lymphoid hypertrophies of the pharynx.

2. The observations of the Vienna pathologists show that sufferers from "adenoids" frequently belong to an abnormal constitutional type that has been found peculiarly susceptible to chloroform narcosis.

3. In view of the statistical and pathological data presented, the general use of chloroform in the operation for hypertrophied tonsils or naso-pharyngeal adenoids is inadmissible.

AURAL EXOSTOSES.

By R. LAKE, F.R.C.S., etc.

THE following notes are of some interest as dealing with other methods than those adopted by Goldstein (July number, *JOURNAL OF LARYNGOLOGY*).

The division of these tumours into ivory or pedunculated, and cancellous or sessile, whilst most useful, is not always, or, indeed, often, evident before operation is undertaken; nor if it were would it do more than save putting out a few extra instruments.

There are various methods of operating through the meatus, which are the only ones which will receive consideration here, retro auricular operations being only undeveloped mastoid operations.

The dental drill, chisel, and screw all have their advocates. The drill is in most cases generally recognized as the easiest and most expeditious means at our disposal, using various sizes and shapes of burr. It is usually advised to use a protector beyond the tumour to save the membrane from injury, but few aurists would now operate on a growth sufficiently small to allow of this being done where the membrane was

still intact. Hovell, who invented the screw, bores into the base of the exostosis, and then, by means of a specially prepared screw twisted into the hole thus made, breaks it off. This would be a less sure method in the cancellous variety.

When the tumour is within easy distance of the operator, and a chisel can be kept well under control, the chisel will be found a useful instrument.

In the first case dentists' enamel chisels were employed; these are too highly tempered as sold, and must have the temper drawn if the operator wishes to avoid the annoyance of one breaking, as happened in Case I. As all these growths increase in size from the surface, the removal of that part of the meatus which covers it is an advantage, for in one instance which came under my observation, in which an exostosis deeply situated on the posterior wall had been removed—indeed, the patient brought it in his pocket—presented, when all inflammatory swelling at length went down, an exostosis of, as far as one could judge, the same size and shape as the original; here it must have grown again from the cartilage, which was left intact, the operation having been post-auricular.

The patient whose case is given first had never bathed in the sea or in a swimming bath. The remaining patient (they were all men) had a distinct cause in his irritating otorrhœa. One is thus left in the dark as to the exciting cause, not only in these cases but also in exostoses in general.

"Hyperostosis" is a term used to designate a condition of a somewhat different nature—that is to say, a more or less uniform bony stricture of the external meatus, which is usually found as a sequel to either a chronic discharge from the middle ear or a chronic eczematous inflammation of the meatus (Case II.).

If the former condition is still present it is necessary to perform a Stacke operation, in order to protect the patient from the increasing risk of intracranial complications.

The view recently put forward by A. Hartmann that hyperostosis is merely an error of development hardly commends itself to one, chiefly as it is so constantly found in association with the before-mentioned diseases, and often appears latish in life.

A. B., aged seventeen, presented himself for treatment at the Royal Ear Hospital in January, 1898, complaining of deafness affecting both ears, the left being worse, and of longer duration than the other. The left external meatus showed on examination a projection, deeply seated and arising from the anterior wall; it was firm and hard to the probe, obviously a bony mass; the finest Hartmann's probe could not be passed by the obstruction.

There was no doubt as to the nature of the little tumour, but there was no means of determining before operation as to whether or no one had to deal with an ivory or cancellous exostosis, its depth in the canal rather favouring the former.

Tuning-fork reactions were normal as to bone conduction on both sides, but on the right there were extensive synechiæ, which made the restoration of the left to its proper functions imperative.

Assisted by Mr. Yearsley, I proceeded to remove the growth through the meatus. All hope of its being pedunculated was dispelled on exposing

its junction with the meatus ; it was then slowly removed by means of fine enamel chisels (one breaking in the process). The operation was very tedious, but entirely effective ; the base of the exostosis, which extended over half the circumference of the canal, was brought to a level with the rest of the wall, except above, where a portion of the meatal wall flaked off, which, though not intentional, improved the general effect.

The meatus was kept plugged with bi-cyanide gauze, soaked in one-twenty carbolic, for two weeks, when home treatment was adopted. In April, however, plugging was again necessary to prevent contraction of the canal. The hearing is practically normal. The operation was done through the meatus, as reflecting the auricle would have given no more room in this case.

Case II. Gunner H., sent to me by Mr. Stuart, of Harwich, had double otitis media suppurativa chronica, and was very deaf ; bone conduction, however, was good. On examination the external meatus was found to be almost occluded on the right side, the left presenting a considerable destruction of the membrane.

The occlusion on the right side proved to be due to bone. There were three masses of bony growth fused to a large extent at their bases, and beyond, or deeper, was much inspissated and offensive pus, the remaining opening being sufficiently small to be capable of total obstruction at any time. In this case a Stacke operation, with a meatal flap after my method, gave an excellent result. Hearing for ordinary speech ; before, three feet ; after, sixteen feet, easily.

ANNOTATIONS, &c.

BRIEF NOTES ON A CASE OF LABYRINTHINE CONCUSSION.

By R. LAKE.

J. C., police constable, aged forty, was sent to the Ear Department, St. Thomas's Hospital, by Mr. MacKellar. He gave the following account of his trouble.

Five months before he had concussion of the brain ; he lost consciousness, and had a discharge of blood from the left ear at the time, and shortly after found that he was deaf in the left ear. He also suffered for some time with vertigo, and completely lost his sense of smell and taste.

On examining the ear no trace of any rupture of the drum or fracture of the meatus was found. The patient had a high humming tinnitus on the left side. The tuning-fork tests demonstrated a great loss of bone conduction on that side. Galton's whistle, however, showed that the uppermost turns of the cochlea were intact ; there was some appreciation of the fork by aerial conduction. He was given mercury for three months, on the chance of some improvement taking place ; but he did not respond to the treatment.

NASAL SPLINTS.

By R. LAKE.

FOR several months past it has been the custom of the writer to use splints cut out of rubber sheeting for all intranasal work requiring them. The rubber sheeting, which can be obtained at any rubber or instrument shop, should be kept in three sizes or thicknesses, one-eighth, two-eighths, and three-eighths of an inch.

The exact shape and size varies with each case to a certain extent, but as a good general guide the splint should be as large as will enter the anterior nares; as to shape, the splint may be either straight or boomerang shaped, the latter enabling one to get pressure higher up in the septum. If the thickest sheeting is used the edges should have a long bevel given them by cutting with a sharp and wet knife.

Some of my colleagues at the Royal Ear Hospital have also found these both cheap and efficient. They cannot become septic any more than vulcanite; they exert an elastic pressure which is less apt to cause sloughing, and which is almost surprisingly effective.

Messrs. Mayer & Co. are having some corrugated sheeting made which will enable more air to pass through, losing nothing in efficiency.

THE RADICAL CURE OF MAXILLARY SINUSITIS.

By R. LAKE.

IN the note on this operation in the April number of this journal, I carelessly made use of the word "copied," and am most grieved that Dr. Luc should have so read it that I implied a deliberate injustice on his part. I tender him my sincere apology; nothing of the kind was meant, and really was not implied, for a few lines further it was stated that neither Dr. Spicer nor Dr. Luc probably were aware of the original paper. I knew Dr. Spicer was not, and now we know Dr. Luc was not.

SOCIETIES' MEETINGS.**UNION OF WEST GERMAN THROAT AND EAR SURGEONS.***Third Sitting, Cologne, 17th April, 1898.**President—HOPMAN.*

(Specially reported for the JOURNAL OF LARYNGOLOGY by Dr. LIEVEN,
of Aix-la-Chapelle.)

RÖPKE (Solingen). *Ten Cases of Chronic Fronto-Ethmoidal Sup-
puration.*

Believing the ethmoid to be affected in almost all cases of chronic frontal empyema, Röpke advocates subperiosteal resection of the whole anterior wall of the frontal sinus, and scraping out the diseased mucous membrane. The horizontal incision is two-thirds of the length of the supra-orbital ridge; the vertical incision joins it at right angles; and the whole flap, including periosteum, having been reflected, the anterior wall of the sinus, the septum, and the nasal process of the frontal bone are chiselled away. Röpke's cases healed in from ten days to six weeks. All were cured of their pains. One patient was considerably disfigured.

HOPMAN said he had good results from opening and scraping the sinus, and dilating the infundibulum.

LIEVEN said he introduced a strip of iodoform gauze through the dilated infundibulum into the nose. The skin wound was closed at once, except in old cases.

LENZMAN (Duisberg). *General Sepsis following a Furuncle at the Entrance of the Nostril in a Strong Woman of Thirty-six.*

In spite of free incisions the disease spread to the forehead, and proved fatal on the fifth day. Staphylococci were found in the exuded fluid. There was no pus.

KRONENBERG (Solingen) quoted a similar case, in which *Thrombosis of the Ophthalmic Veins and of the left Cavernous Sinus was found post mortem.*

Tuberculosis of the Mouth.

Three weeks after the extraction of a tooth an ulcer with coated base and infiltrated edges appeared in the socket, spreading to the cheek, and then to the lower lip and tongue, and proving fatal in three months, in spite of lactic acid, curetting, etc.

BLUMENFELD described a similar case.

GUYE (Amsterdam). *On the Plica Vestibuli, and the Aspiration of the Nose in Breathing.*

The rima vestibuli, or narrow space between the plica vestibuli and the septum, is apt to be closed during inspiration by the aspiration of the nostrils, and this is especially favoured by narrowness of the nostril, irregularity of the septum (spina), and relaxation of the cartilages and muscles of the nose, as occurs in sleep or facial paralysis. Many persons with one narrow nostril can only sleep comfortably on that side. To keep the nostrils open during sleep Guye uses rubber rings cut from a piece of tubing. Schmidt uses Feldbausch's instrument.

According to Zuckerkandl the plica vestibuli is a continuation of the inferior turbinated body. It is well developed in some monkeys, and runs horizontally in the lower forms, and more vertically in the higher forms, and in man. Normally the plica is kept on the stretch by muscular fibres which prevent it from being sucked against the septum.

NEUENBORN (Crefeld). A patient, aged sixty-one, suffered after influenza from *Dyspnœa, with marked Stridor, necessitating Tracheotomy.*

On examination the lateral parts of the epiglottis were seen to be

relaxed, and hanging loosely down, so as to be sucked into the larynx with each inspiration. On raising the epiglottis with a hook the stridor disappeared.

Diagnosis.—Acute paralysis of aryteno-epiglottic muscles.

KRONENBERG (Solingen). (*a*) *Supposed False Croup in a Boy of Eight*, shown by the Röntgen rays to be due to the presence of a foreign body under the right vocal cord. It proved to be the hook of a cravat, and was removed by tracheotomy.

(*b*) A neurotic boy of five, who had had adenoids removed, suffered from attacks of threatening suffocation as soon as he fell asleep. Observation showed the attacks to be due to the base of the tongue sinking down towards the glottis (as frequently occurs during anæsthesia). The attacks were prevented by fitting an apparatus so arranged as to push forward and hold forward the angles of the jaws. The adenoids were probably the primary cause, acting by causing carbonic acid poisoning and relaxation of the muscular tissue of the tongue in a neurotic child.

HOPMAN. *Removal of a Broad-based Tumour from the Entrance of the Larynx by Thyrotomy.*

Aphonia, dyspnœa, and suffocative attacks were present. The larynx was split, and the tumour scraped out from its base in the ventricle and false cord. The vocal cord was divided and stitched together again. After treatment, Schrötter's bougies. Voice returned in six months. The growth was a papilloma, firm, uneven, flesh coloured.

A boy of fourteen got a *Carob Seed in his Ear*. It perforated the membrane, and became wedged in the tympanum, exciting suppuration. The auricle had to be detached and turned forward with the membranous meatus before it could be extracted. Deafness, both to high and low notes, was complete on that side.

HOPMAN. *The Operation for Firm Fibrous Tumours of the Naso-Pharynx and Base of the Skull; Observations on Nasal Polypi; Demonstration of Tumours and Cases.*

Hopman rejects Bensch's division of such tumours into polypi and fibromata. Both are essentially the same, although the polypi grow more rapidly. Both are firm and leathery, containing much elastic tissue, and with a tendency to superficial necrosis. Their consistence distinguishes them from the soft fibrous polypi which grow from the nasal mucous membrane, and which may produce a similar clinical picture.

Hopman showed an oedematous polypus weighing eighty-four grammes, removed from a man of sixty. It grew from the nose, but hung down into the pharynx, causing dysphagia, snoring, and suffocative attacks, but no bleeding. These soft fibromata contain few glands and little mucin, but much serum albumen.

Hopman operates thus: The palate is controlled by a loop of rubber tubing, passed in at the nose and out at the mouth, with its ends fixed over the upper lip. The patient is placed with the head hanging over the end of the table. As far as possible an incision is made round the

attachment of the tumour, and then, with the left forefinger as a guide, it is loosened from its base with elevator and raspatory, and the detachment is completed with snare or forceps. The base is scraped, and a plug of iodoform gauze is applied. Speed is important as bleeding is free. Hopman has had five successful cases.

MOSES (Cologne). *On Cholesteatoma.*

Although it does occur apart from inflammation, yet it is almost always associated with suppurative otitis media.

Haberman proved the extension of epidermis as far as the antrum in cases in which a perforation is adherent to the inner wall of the tympanum.

Treatment may be conservative, or consist in removal of the ossicles, or the radical operation. Two successful cases were shown, both with a permanent opening behind the auricle.

William Lamb.

SOCIETY OF LARYNGOLOGY, OTOTOLOGY, AND RHINOLOGY OF PARIS.

April 1st, 1898.

M. CHATELLIER, *President, in the Chair.*

Contribution to the Study of the Vowels by Photography of Manometric Flames.

M. MARAGE. A short notice of this paper, taken from the "Presse Médicale," has already appeared in the May number of the JOURNAL OF LARYNGOLOGY, p. 254. The full report is to be found in the "Arch. Internat. de Lar.," Jan., Feb., 1898. An extension of the same piece of research is reported under the title, "Étude des Cornets Acoustiques," in the "Arch. Internat. de Lar.," Mar.-April, 1898, and will be dealt with in another place.

The method of studying the subject has consisted in the photography on a travelling film of the "manometric flames" of Koenig. The details of the apparatus, by means of which M. Marage seems to have avoided the accidental vibrations which have minimized the value of previous experiments, will be found in the paper last mentioned.

M. Marage's conclusions are as follows:—

1. One must distinguish between vowels spoken and vowels sung. They differ considerably, the spoken vowel being formed by the bucco-naso-pharyngeal cavity, the vocal cords taking merely an accessory part in their production. Consequently the vocable dominates, and the note is accessory. Each vowel has its characteristic tracing (photography of manometric flames). The vocal cords predominate in the formation of vowels sung, consequently the vocable is accessory, and the note predominates. All the vowels when sung give tracings resembling that of the tuning fork.

2. Each spoken vowel gives a tracing characterized by the same

group of flames. I, U, OU, have each one flame; É, EU, O, have two flames; A has three flames. (N.B.—French pronunciation.) This classification corresponds with the results obtained by Grassmann, Helmholtz, and Schneebeli.

3. In speaking each vowel before the manometric capsule a certain number of flames are obtained. Each flame corresponds to a double vibration; the number can be counted, and this gives the vocable of each vowel. The vocable is invariable for each vowel, and for each experimenter, if the manner of pronunciation is not varied.

Each vowel is, then, characterized rather by the tracing proper to it than to the vocable, which varies within certain limits. The undue importance hitherto given to the vocable has been due to experimenters relying on the ear as a means of observation.

4. By combining the vowel A with I, U, or OU, one gets a tracing characteristic of the two-flame vowels É, EU, O. Consequently there are but four fundamental vowels I, U, OU, with one flame, and A with three flames. For the others—

$$\begin{aligned} A + (-I) &= \text{É} \\ A + (-U) &= \text{EU} \\ A + (-OU) &= \text{O} \end{aligned}$$

These equations are equally true when the vowels are replaced by their vocables. This result verifies Grassmann's theory. Herein we have an explanation of the difficulty of understanding the words of a chorus—*i.e.*, formation of new vowels by the combination of two vowels sounded at the same moment.

5. Sung vowels have no resemblance to spoken vowels. In the male voice the vowels pass constantly from one to the other without the ear being able to recognize the change; it is in the tracing alone that the change is clearly noted.

In the female voice the characteristic flame, and consequently the vocable, disappears, and there is no difference between the vibrations of the tuning fork and that of the voice; there is no inequality between the individual flames, which stand on the tracing at equal distances. This is explained by the fact that it is the vocal cords which do the singing.

We can now understand how impossible it is to hear the vocable in the sung vowel, for either the vowel is transformed or the vocable is not perceptible. This explains not only the disaccord which exists among former experimenters, but also the reason why it is more difficult to understand the words of a song than of a conversation. In fact the singer preserves the note and lets slip the vocable (*i.e.*, the vowel), while the speaker preserves the vocable and lets slip the note.

M. SAINT HILAIRE: In M. Marage's very interesting communication one had a glimpse of an explanation of the peculiar and disagreeable intonation employed by deaf mutes who had learned to speak. It was noticeable that "I" was always pronounced by them in a high tone, and "OU" in a low tone, and so on. One cannot teach these patients that it is the movement of the tongue, lips, and cheeks which more than anything else gives the vocables of the vowels.

Scheme of the Central Course of the Nerves of the Labyrinth.

M. BONNIER presented a coloured diagram representing the course and connections of the labyrinthine nerves, intended for teaching purposes. A reduced copy accompanies the "Arch. Internat.," March-April, and the full-sized "scheme" may be had of Steinheil, Paris.

A Case of Pedunculated Sarcoma of the Tongue. Removal with Galvano-Cautery Snare. Cure.

M. LICHTWITZ. In 1887 Marion could find but twenty-three reported cases of primary sarcoma of the tongue.

The present case is that of a woman of twenty-five, who, six weeks after her confinement, noticed that a small tumour was developing upon her tongue. Antecedents of no interest.

On examination there was seen a tumour, the size of a small nut, situated on the dorsum two centimètres from the tip and four millimètres to the left of the middle line. The growth was pedunculated, of a dirty grey colour, and was covered with healthy epithelium, which, though somewhat irregular, was neither ulcerated nor deformed by cicatrices. The surface was slightly mammillated, and the tumour was of firm consistence. After cocaineization it was removed with the hot snare without pain or hæmorrhage. Prof. Sabrazès reported upon the growth, and found, upon microscopic examination, "at the periphery a stratified squamous epithelium arranged in long undulations. . . Below this the tissue consists of round and fusiform cells, together with tortuous capillaries. . . Here and there are areas of hæmorrhage. . . The tumour is made up of round and fusiform cells surrounding numerous vessels, sometimes even forming a series of concentric rings round them, and appearing to multiply at the expense of the vessel wall itself. The vessels have no differentiated tunica propria; they are blood capillaries of very irregular form, distorted by buds of sarcomatous tissue which is proliferating at the expense of their walls. There are no dilated lymphatics, no giant cells, no necrotic centres, and no masses of bacteria. The tumour is of active growth, and histologically is to be diagnosed as angio-sarcoma, which has in all probability sprung from the perivascular connective tissue."

Two years have elapsed since the removal. A slight eminence remains at the point of attachment, and this has not varied in size since the operation.

Two Cases of Maxillary Antrum Empyema following Plugging of the Nasal Fossæ.

M. SAINT HILAIRE. During the last three years the speaker had met with two such cases. The first was that of a lady of fifty-two with albuminuria of some years' standing. In consequence of a severe epistaxis the right nostril was plugged, both anteriorly and posteriorly, by means of Belloc's sound. After two days violent suborbital pain was complained of, and the anterior plug was removed. Failing to remove the posterior plug, the doctor called in the speaker on the fourth day, when he removed the plug. The right nostril was found full of fetid

pus. Antiseptic treatment was ordered. Three months later the patient again consulted the speaker, when antral empyema was detected and subsequently verified by operation.

The second case occurred in a woman of thirty-nine, who without assignable cause was on two occasions seized with violent epistaxis. On the second occasion her doctor packed the left nasal fossa. The dressing was left for two days, during which violent pains in the head were experienced, together with œdema of the left face. On the third day the packing was removed, and both pain and œdema disappeared.

On the seventh day the speaker was consulted on account of purulent discharge from the left nostril. There was much pus in the middle meatus, with fœtor of the breath and localized pain. These symptoms had never been experienced before. Examination revealed empyema of the left maxillary antrum.

The ætiology of these cases is clear : *i.e.*, the disintegration of blood in the maxillary antrum. The speaker asks, is it ever necessary to plug the nose for epistaxis? In most cases of epistaxis the bleeding is from the anterior part of the septum, and can be reached directly with wool and hæmostatics, etc.

DISCUSSION.

M. LUBET-BARBON wished to know if previous undiagnosed empyema could be excluded in these cases. He did not think the mere inclusion of blood in the antrum was a sufficient cause. As for plugging, he considered it inadmissible. In all cases the bleeding point should be sought for and treated with chromic acid, which was preferable to silver nitrate and the cautery.

M. SAINT HILAIRE, speaking of previous empyema, said that in the first case evidence of dental disease was absent.

M. CHATELLIER quite agreed with M. Lubet-Barbon ; but, still, there were certain instances where plugging was necessary by reason of inability to find the bleeding spot or of the absence of instruments.

M. EGGER thought the disadvantages of plugging depended upon the manner in which it was carried out, and he recalled the method by stages as practised by Lermoyez.

M. LUBET-BARBON asked if his colleagues had tried gelatine solution. He found hydrogen peroxide a reliable hæmostatic.

M. G. GELLÉ (*fils*) said that when peroxide was used the packing should be done loosely. The drug was ineffectual against hæmorrhage from the larger arterioles.

M. CHATELLIER believed in tight packing with salol gauze after removal of spurs. He had seen toxic symptoms with iodoform gauze.

Ernest Waggett.

AUSTRIAN OTOLOGICAL SOCIETY.

February 21st and 22nd, 1898. ("Monats. für Ohrenheilk.")

Prof. GRUBER showed—

1. A patient with *Bilateral Obliteration of the External Meatus following Chronic Otorrhœa*. The closure was due to bony thickening covered by normal skin. The question of operation was under consideration.

2. A patient in whom, after the radical operation, the *Posterior Wall of the Carotid Canal separated as a Sequestrum*, exposing the artery, which could be seen pulsating. In the region of the promontory a firmly fixed sequestrum could be seen and felt, and at the upper part of the cavity the pulsations of the brain were plainly visible. Fearing hæmorrhage Prof. Gruber had the common carotid tied. The case is under observation.

3. Eight cases of *Successful Radical Operation for Caries of the Temporal Bone and Cholesteatoma*. Gruber considers that no further operation is necessary to keep the cavity in the bone open. When the cholesteatoma ceases to form, such cavities either do not close at all, or, if they do, their closure is free from risk. Gruber then spoke at length on cholesteatoma. He concludes that it occurs almost exclusively in the middle ear in cases of chronic suppurative inflammation of the mucous membrane, with or without caries. Other modes of origin, such as by the extension of epidermis from the external meatus, no doubt do occur, but are certainly extremely rare. He believes that deficient access of air to the inflamed parts favours the formation, hence its frequency in the antrum, attic, and mastoid cells. For the same reason Eustachian obstruction favours it. In accordance with this view Prof. Gruber recommends in such cases the inflation of air from the external meatus. A little attic tube attached to a Politzer's bag may be used. The tube is introduced through the perforation, and the air blown in various directions.

Dr. BING remarked on the frequent presence of granulations, and suggested that the epithelium in the neighbourhood soaked up pus, and became swollen and loosened. Hence the value of alcohol drops as a de-hydrating agent.

Dr. SPIRA alluded to primary cholesteatoma of the external meatus as a case in which no inflammation was present. He regarded granulations as a consequence rather than a cause of cholesteatoma.

Prof. POLITZER on *Permanent Perforations of the Membrana Tympani*. Small perforations heal and leave no trace, but in larger ones the membrana propria is not replaced, and regeneration takes place from the epidermis or from the mucous membrane, probably most frequently the latter.

He showed *Preparations from Three Cases of Healed Permanent Perforations.*

In 1 and 2 there was epidermal thickening of flat nucleated cells, extending over the edge of the perforation and gradually passing into the epithelium of the mucous membrane of the tympanum. The membrana propria was cut off sharply at the edge of the perforation, and overgrown by the thickened mucous membrane.

In 3 the epidermis-covered edge of the perforation shows on the outer side a raised swelling, the fibres of the membrana propria are sharply cut off, and the inner or mucous layer is thickened, vascular, cystic, and firmly united with the cuticular layer at the edge of the perforation. The cuticular layer is also greatly thickened, and presents on section an almost polypoid appearance. The thickenings consist of vascular nucleated connective tissue, covered with more or less cubical epidermal cells, which can be traced over the edge of the perforation down the inner surface towards the floor of the tympanum.

The persistence of dry perforations is thus certainly due to epidermal cells spreading over the edge of the perforation, and Politzer thinks that this process might be induced, in certain cases, by irritating artificially the epidermal surface with trichlor-acetic acid before proceeding to make the artificial perforation.

Dr. C. BIEHL. *On the Closure of Healed Perforations by the Application of Trichlor-acetic Acid.*

Of twelve cases seven were successful. The number of applications varied from four to thirteen, at intervals of from four to eight days. The strength of the solution used varied from ten to fifty per cent. A little roll of wool on the end of a probe was used to apply it. Neither size nor situation of perforation is any contra-indication. Pin-hole perforations are often most troublesome. Where the perforation is in a cicatrix, or where the edges are calcified, it is of course unfavourable. Pain is slight. Suppuration occurred once, and hæmorrhage once, possibly from the caustic touching the mucous membrane of the tympanum.

Dr. SINGER referred to the formation of little crusts of secretion on the healing edge of the perforation. They should be removed with forceps. In pin-hole cases he applies a vigorous inflation (Valsalva), and passes a fine probe dipped in the acid through the opening, so as to stimulate the inner surface of the membrane. Greatly improved hearing followed in many cases. The cicatrices in successful cases are not depressed, nor sharply bounded, nor dark in colour, and they cannot be sucked out by Siegel's speculum. They are nearly as thick as the rest of the membrane, and probably contain fibres of the membrana propria.

Dr. GOMPERTZ obtained complete closure in sixteen out of twenty-nine cases, and partial closure in eight. In many of the successful cases the perforation extended right up to the tympanic ring. He used ten per cent. cocaine on a pledget of wool. In a great majority of cases hearing was improved, and sometimes tinnitus was lessened.

Caution is necessary with atrophic membranes or things will be made worse. In one case he obtained complete healing by applying the thin

skin from the inside of an eggshell as a support (or splint) to the weak spot.

Dr. ALT referred to the importance of removing little crusts of dried secretion, often so small as to be more easily felt with the probe than seen.

Dr. PANZER showed *Preparations illustrating the Anatomy of Acute Tympanitis, from a child.*

The mucous membrane was swollen and infiltrated with round cells; there was enlargement of the blood vessels, and lymphatics in the deeper layers; here and there projecting from the surface were granulation masses, especially on projecting ridges of bone in the antrum, which, with the adjoining mastoid cells, was also affected. Much of the epithelium was shed, and there was a perforation close to the short process. Most of the exudation occupied the posterior lower quadrant, bulging the membrana tympani. Granulation tissue filled the space between the ossicles and outer wall of the attic; the tendon of the tensor tympani and the chorda were surrounded by granulations. The facial canal showed a defect, and the peri-neurium and nerve fibres were affected by the inflammation. This shows how easily facial paralysis may arise in children from acute tympanitis.

Prof. URBANTSCHITSCH. *Defects of Hearing in Deaf Mutes.* Results generally confirmatory of those already published.

1. In cases in which the two ears are not equally affected the left ear is generally the better of the two.
2. Deafness to all notes is rare.
3. Affection of one ear only is rare: two per cent.
4. Some hear best the higher notes of the scale, some the lower, and some the middle; but the results vary in the same patient on different days, notes which are audible on one day being inaudible on another day, and *vice versâ*.

Dr. HAMMERSCHLAG. *Reflex Contraction of the Tensor Tympani. Is it Dependent on the Cerebral Hemispheres?*

Politzer proved that the tensor tympani is supplied by the fifth. Hensen proved that in the dog the muscle contracts constantly to the stimulus of sound, especially high notes. (Sensory stimulation of the meatus, cochlea, or memb. tymp. secondaria causes no contraction of the muscle.)

Pollak found that destruction of the cochlea stopped this contraction. The sound waves first affect the cochlear nerves and then the central nervous system, whence they are reflected to the muscle.

Hammerschlag's method was to detach the auricle and meatus and turn them forward, strip the membrana tympani off the long process of the malleus, dislocate the head of the bone from the incus, and turn the long process of the malleus outwards, so that the movements caused by the contractions of the tensor tympani might be more easily observed. A shrill whistle was used to stimulate the tensor.

Dr. Hammerschlag found that reflex contractions of the tensor tympani to the stimulus of sound occurred after complete removal of

both temporal lobes. Further, when the section of the brain was made in such a way as to cut off the cerebral hemispheres and basal ganglia from the medulla poris and cerebellum, the reaction of the tensor to sound was still as readily obtained as in the uninjured animal, which proves it to be a true reflex action, produced in the same way as the majority of reflex actions. He divided the medulla above the respiratory centre, and did not require to use artificial respiration.

Pollak, who divided the medulla lower down, and used artificial respiration, found that section of the medulla at the lower level stopped the reaction.

William Lamb.

January 25th, 1898. ("Monats. für Ohrenheilkunde," Feb., 1898.)

Prof. GRUBER showed a *Rare Malformation of the External Ear.*

The auricle is rudimentary and the tragus very small, and behind the tragus is a little round opening, bounded posteriorly by a slight cutaneous elevation, which is continued below into the flap of skin representing the lobulus. Above this cutaneous elevation is a second swelling about the size of a small walnut, the skin over which is continuous with that of the cheek. Above this last-named swelling is a curled-up fragment of cartilage, representing the upper end of the auricle. In front of this fragment of cartilage, and about three centimètres above the other opening, is a second smaller opening exuding pus.

The lower opening admits a probe for one and a-half centimètres in the direction of the external meatus. The upper opening leads into a passage which runs medially and posteriorly till the sound can be felt moving freely in the large swelling above the lobulus. Pus can be pressed out of this swelling till it is collapsed.

Gruber considers the case to be one of deformed auricle with rudimentary external meatus, combined with a congenital aural fistula of unusual length (two centimètres). The swelling behind the auricle is an abscess, such as is known to arise in connection with congenital aural fistula.

The PRESIDENT remarked that congenital aural fistulæ sometimes furnish a milky fluid which is not pus. They generally run parallel to the meatus. In this case the axes of the two channels cross.

Prof. GRUBER showed a *Case of Post-Scarlatinal Otitis in which the Staples were thrown off spontaneously.* The hearing improved. Rinne, negative; bone conduction prolonged.

Prof. POLITZER remarked that in such cases the malleus and incus were often shed as well as the stapes. He had seen bilateral cases, followed by total deafness.

Prof. URBANTSCHITSCH. *Two Cases of Weakness of Memory from Double Tubal Catarrh.*

1. The patient is a waiter. As soon as the feeling of pressure in the ears comes on he cannot recognize the guests in the restaurant, forgets

their names, and confuses their orders. The passage of Eustachian bougies relieves him (although there is no considerable stricture), but the good effect only lasts one day. Inflation has no effect.

2. A German-Russian lady who teaches French. She suffered from middle ear catarrh. As this got more marked her French vocabulary became more and more limited till she could not teach at all. Her German speech was not affected. After treatment by Eustachian bougies she gradually recovered her French, and by continuing the use of the air douche she was quite well in six months.

Prof. URBANTSCHITSCH also showed *Preparations from Two Fatal Cases of Otitis*.

1. Otorrhœa of ten years' duration, for which the radical operation was performed. On the fifth day the patient complained of intolerable headache, and died suddenly. *Post-mortem*.—A fistula was found on the upper surface of the petrous bone, medially from the superior semicircular canal. The dura mater at this point was discoloured—greenish. In the cerebellum was a large fœtid, chronic abscess.

2. Otorrhœa of twenty years' standing; agonizing occipital headache, vomiting, and vertigo. At the operation large cholesteatomatous masses were removed from the middle ear. Patient felt better, but the head continued retracted, and death occurred on the sixth day.

Post-mortem.—A fresh thrombus in the transverse sinus, extending into the jugular vein. A fistula in the petrous bone leading into the cholesteatomatous cavity. Subdural septic pus. Discoloration and necrosis of surface of cerebellum corresponding to the fistula.

Dr. HAMMERSCHLAG showed a *Case of Cured Serous Perichondritis of the Auricle following a Blow*.

Puncture and injection of weak iodine was the treatment adopted at first. Afterwards the puncture was repeated four times, and a compress applied.

HAMMERSCHLAG also showed a *Patient on whom the Radical Operation had been performed*.

She had suffered from chronic otorrhœa, with loud rushing noises in the ear and frequent attacks of severe vertigo, generally with loss of consciousness. As the least attempt to cleanse the ear caused intense vertigo and loss of consciousness the radical operation was performed.

The antrum and attic were found stuffed with cholesteatomatous masses. The patient is now free from her attacks and can bear the wound to be packed with gauze, or washed out with the full strength of the irrigator. She can now bear firm pressure upon parts of the inner wall, the least touch upon which used invariably to produce vertigo and loss of consciousness.

Prof. POLITZER showed *So-called Polypoid Growths of the Mucous Membrane of the Middle Ear*.

On the inner wall of the tympanum in new-born children, at the anterior part, little ridges of bone may be seen running from behind

forwards, and joined by little cross ridges. The "growths" are nothing more than the folds of hypertrophied mucous membrane covering these bony ridges. In adults this part of the inner wall is smooth; but the same condition is seen in them on the floor of the tympanum, which is ridged and uneven.

William Lamb.

SOCIETY OF HUNGARIAN AURISTS AND LARYNGOLOGISTS.

("Monatschrift für Ohrenheilkunde," Feb., 1898.)

The PRESIDENT (Herr VON NAVRATIL) showed (1) *A Case of Plastic Operation for Scleroma of the Nose and Upper Lip.*

The nose flap was taken from the forehead and included periosteum.

2. *A Case of Extreme Deviation of the Septum to the Right.*

The nose pointed to the right, and the right nostril would hardly admit a probe. The nostril was slit with a pair of scissors, and a piece of cartilage fourteen by nine millimètres was removed, with complete relief of all symptoms—nasal obstruction and dryness of throat.

HULTL showed a *Patient who had Fallen under a Mill Wheel.*

The nasal bones were destroyed and a hole was left at the root of the nose as big as a dollar. The free edge of the septum was visible in the hole. The only soft parts left were the tip and alæ, and the septum mobile. Hultl cut one flap from the remains of the soft parts at the root of the nose, and turned it downwards to fill the gap, the skin surface being towards the interior of the nose and the raw surface outwards. The edges of the gap having been freshened, this flap was stitched into position, leaving thus a large raw surface twice the size of the defect. To cover this raw surface a large flap of skin and bone (outer table of frontal bone) was cut out from the forehead with knife and Krause's circular saw, driven by a dental drilling machine. The flap was loosened with a sharp osteotome. The bony part of the flap was next sawn lengthways, so as to form an arched bridge of the nose, and stitched into position, its raw surface resting upon the raw surface of the first flap. Primary union and a faultless profile resulted.

POLYAK. *A Case of Lupus of Nose and Face.*

In the interior of the nose there were exuberant granulations on both sides of the septum, with suppuration. Eighty per cent. lactic acid was applied, after curetting. Other speakers considered the nasal disease to be tubercle (one bacillus was found in twenty sections); but the disease, although of four years' duration, was still superficial.

ZWILLINGER. (1) *A Case of So-called Prolapse of the Ventricle of Morgagni.*

The process is a chronic hyperplastic trophic catarrh, which may affect (a) the surface of the true cord; (b) the lateral wall of the ventricle;

(c) the under surface of the false cord. When bilateral it obstructs respiration. In this case the enlargement was removed piecemeal with forceps at successive sittings. The left cord is still almost completely covered by a fold of mucous membrane, which proceeds from the ventricle and is distinct from the false cord. It can be lifted with a probe posteriorly. The lateral wall of the ventricle is the part affected.

2. *A Case of Perforating Ulcer of the Septum in the Second Stage, i.e., with the cartilage exposed in its base.* As usual, it is situated about the middle of the quadrangular cartilage.

KREPUSKA. *A Case of Primary Sarcoma of the Right Casserian Ganglion.*

The patient, a man of thirty-eight, came under observation in February, 1895, having suffered for a month from daily attacks of "neuralgic headache," the pain shooting into the right ear. Some deafness and tinnitus on right side. Parts normal to inspection. Sense of taste gone from the tongue (on the right side),* but present in the palate. Mastoid tender; Weber heard on right side; tube pervious to catheter. Considerable trismus; the incisors cannot be separated more than one to two centimètres. Hemiparalysis and trismus, with a history of syphilis, suggested gummatous periostitis of base of skull, involving the trunk of the fifth nerve.

A month later the right frontal and parietal bones were tender to percussion, and the supra and infraorbital nerves were tender on pressure at their points of exit. The sixth and seventh intercostal spaces became very tender to pressure, and pains, worse at night, darted along both sciatic nerves.

Right-sided deafness and tinnitus continued, the membrana tympani was retracted, the watch only audible close to the ear. Weber heard in the middle; air conduction better than bone conduction on the right side. The diagnosis of multiple syphilitic neuritis was made. Neuralgic pains in the head and legs were the patient's chief complaint, but his strength failed rapidly.

The lumbar region became tender, and the dorsum of the right foot anæsthetic. Tender swellings appeared in the left sciatic notch, and on the sacrum, shortly before death, which occurred in September, 1895.

Post-mortem.—A tumour, three and a half by two centimètres, occupied the region of the right Casserian ganglion. The growth had eroded the apex and anterior part of the petrous bone. The carotid artery was partly embedded, but the tympanic cavity was not invaded, although the belly of the tensor tympani was infiltrated.

The three divisions of the fifth nerve emerged from the tumour. The first division was not thickened; the second division was slightly thickened; and the third division was as thick as a finger, and was connected with a growth in the naso-pharynx, which extended over a considerable part of the posterior and lateral walls, displacing the cartilaginous tube forwards, and reducing its opening to a slit.

* The right side of the tongue is specified at the end of the paper, but in this place he only says "taste gone from the tongue." Bilateral affection of taste from unilateral lesion is a disputed point.

In the primary tumour no ganglion cells were to be found; here and there a nerve fibre was visible. In the second division at the foramen rotundum a few small bundles of nerve fibres were found. The tumour was an alveolar sarcoma.

The author gave the following *résumé* :—

1. Incurable otalgia, without aural changes, ought to suggest disease of the fifth, or of its ganglion.
2. On the right side of the tongue taste was absent as far as the circumvallate papillæ.
3. There were no eye symptoms—trophic changes—such as one might have expected.

William Lamb.

ABSTRACTS.

MOUTH, &c.

Buys.—*A Frequent Cause of Lacunar Tonsillitis.* “La Policlinique,” Jan. 15, 1898.

THE lessening of the power of the tonsil to resist invasion by microbes is looked on as the cause, and this, in turn, is due to nasal obstruction, especially from adenoids.

B. J. Baron.

Hessler (Hallé) discusses the question, *When and How to Remove Tonsils and Adenoids in Cases of Acute Otitis Media.* “Monats. für Ohrenheilk.,” Feb., 1898.

THE author advises early operation—“immediately after the inflammatory symptoms have reached their height.” In mucous catarrh of the middle ear he waits till the membrana tympani is less bulging, and the crepitation on auscultation less copious.

In doubtful cases of muco-purulent catarrh with slower course, more caution is necessary. In pure suppurative cases he first performs free paracentesis; and, as soon as the discharge and congestion begin to diminish, he proceeds to remove the tonsils and adenoids.

The beginning of the stage of absorption is the time to operate.

Hessler has never seen any ill effects from the operation; on the contrary, his experience of the method has been entirely favourable. The Eustachian tubes become more quickly pervious, and the secretion in the middle ear diminishes more rapidly.

Beckmann confirms this from an experience of two hundred and eighty-five cases. He removes the adenoids during the height of the attack.

Early tonsillotomy has, further, the advantage that it is much easier to remove thoroughly a swollen tonsil than one that has shrunk back between the pillars of the fauces.

Hessler recommends Schütz’s pharynx tonsillotome, as modified by himself, for the removal of adenoids.

In conclusion, Hessler discusses the question of anaesthesia. For the last three years he has operated with increasing frequency without any anaesthetic, removing first the adenoids and then the tonsils at the same sitting. The children are described as sitting “as still as mice.”

William Lamb.

Jessen, F. (Hamburg).—*The Tonsils as Sources of Ingress for Severe General Infection*. "Münchener Med. Woch.," June 21, 1898.

THE author points out diphtheria as a classical example of a tonsillar affection producing secondary intoxication of the organism. He considers that the evidence in scarlet fever is greatly in favour of mixed infection being derived from the angina. Various authors have made out a close connection between angina and rheumatism. Buschke demonstrated from four cases, examined bacteriologically, that acute osteomyelitis may be caused by the entrance of staphylococci and streptococci through the tonsils. Richardière, Peterson, Hanot, and Heddeus have described cases where descending lymphangitis, pleurisy, septicæmia, and death have followed a non-phlegmonous angina. Dennig, one of the first investigators of "krypto-genetischen" septicæmia, states that many of these cases are preceded by an angina. Jessen has observed several cases in which he attributes the disease to a tonsillar origin.

1. Man, thirty, with severe general malaise, articular pains, stupor, and sore throat, had on one tonsil a dirty green, on the other a yellow exudation. Temperature, 39°. Painful swelling on the neck. On the third day there was on the leg and forearm a large papular eruption, on the back and face smaller papules; these were not multiform, nor showed the characteristic nodes of erythema nodosum. At the same time patient had severe articular pains. In about eight days erythema and articular pains decreased with intermittent fever. Internal organs were healthy. Case resembled gangrenous diphtheria, except that, bacteriologically, only staphylo- and streptococci were found on the tonsillar exudation.

2. Woman, twenty-eight, was admitted to hospital as a case of typhoid (?). Vidal's reaction was negative. She died in twelve hours. Diagnosis, septicæmia and uræmia. Temperature 40·8°. Albuminuria and epithelial casts, twitching in left arm, small hæmorrhages in the skin. *Post-mortem*: Numerous small hæmorrhages in the pleure; slight hypostasis in lungs; numerous ecchymoses in peri cardium; small abscesses in heart, recent ulceration on valves; lentil-sized ulcers on left false cord; tonsils, smooth on surface, on section thickened abscesses on both sides; liver, fatty degeneration; spleen, much enlarged; kidneys, large with numerous small abscesses and hæmorrhages. The older appearances of the suppurative processes in the tonsils indicate them as the cause of the general pyæmia. While the patient was under observation there was no external exudation on tonsils. Case shows the difficulty in determining the primary tonsillar affection.

3. Girl, seventeen, with angina of the left tonsil, from which streptococci were obtained; became affected twelve days later with pneumonia, pericarditis, pleurisy, renal inflammation, and other signs of septic infection. Streptococci were found in the pneumonic sputum, but no pneumococci nor influenza bacilli.

4. Woman, twenty-four, after an angina developed pericarditis, double pneumonia, then general septicæmia.

He considers such cases are not unfrequent, but that they are frequently overlooked, as they usually come under observation after the angina has disappeared. Cases 2 and 4 showed a collection of pus in the interior of the tonsil with a normal surface. He thinks that by careful attention one may distinguish an angina clinically without bacteriological examination, and determine whether it belongs to the variety from which a fatal general infection may be expected. The exudation has not a lacunar situation, but extends, as in a culture tube, in long rows of a yellow or yellowish white colour from above downwards into the tonsil. It must from the first day's illness be looked on as a dangerous symptom and must be energetically treated. He also considers many cases of scrofula to be due to absorp-

tion from the naso-pharyngeal tonsil, and has seen great improvement from its removal, when there is no secondary tuberculosis. Such cases must be carefully examined for enlargement, even although nasal respiration is free. He confirms other authors that primary tonsillar and cervical glands tuberculosis proceeds from the tonsils. *Guild.*

Lenzmann.—*Tuberculosis of the Mouth following Tooth Extraction.* "Münchener Med. Woch.," June 21, 1898.

WOMAN, twenty-six, had had a tooth removed by a dentist three weeks before. She was of slight build, highly nervous, otherwise had been always healthy. Mother, brother, and sister had died of tuberculosis. Lungs were normal. For a few days there had been an exudation on the gum where the tooth was removed, and on the inside of the cheek in the depression between a ragged ulcer. During the next few days a hard infiltration developed around this, and spread to the lower lip. This ulcerated. Mercury and iodide of potash had no effect. After frequent microscopic examination a few tubercle bacilli were found. Lactic acid and scraping did no good. Actual cauterization seemed to benefit a little, but in spite of this process spread to the upper lip. The affection in the mouth lasted about three weeks before it was arrested. Then the patient showed infiltration of the apex of the right lung, with hectic fever. She died three months later.

Blumenfeld reported an analogous case.

Guild.

Sharp, Arthur X.—*Case of Kerostomia (Mouth Dryness).* "Lancet," April 23, 1898.

A SINGLE woman, aged forty-one years, consulted the writer for constant dryness of the mouth. Her family and personal history were alike good, and except for the local trouble she had never been better in her life. She said she could smell and taste perfectly, and had no complaint to make about the nose. A brief examination gave the impression that the mucous membrane was pale and somewhat dry. No obstruction could be found nor any dry crusts, but a musty smell often associated with such conditions was recognizable. When she had a cold she used as many handkerchiefs as anyone else. The teeth were not specially bad; several had been stopped at various times and she had lost some of the back ones. Lately she had worn some artificial ones; the dryness was aggravated if they were disused. She had no difficulty in chewing or swallowing with the aid of frequent sips of fluid. The mucous membrane lining the lips, gums, cheeks, tongue, and palate was dry and glazed. The fauces and pharyngeal wall were granular, but the dryness only extended to the base of the tongue. One or two strings of dry mucus were seen in the mouth, and there was always a quantity adherent to the teeth and lips in the morning. The tip of the tongue was red; the rest of it was pale. The surface was granular with papillæ, some fungiform ones near the tip being especially prominent. There were no inflamed patches, and only a few very shallow transverse furrows. The papillæ of the salivary ducts were not prominent, and no secretion could be expressed from them. After moistening the tongue with water a very faintly alkaline reaction was obtained to litmus paper. The lips were dry and peeling. The angle of the mouth on the left side was scarred. The skin was not unduly dry, and the patient perspired freely on the least exertion. The patient's urine was not examined. She was not anæmic, and there appeared to be no urinary disorder. She was not subject to parotitis, and there were no signs of pressure on any part of the salivary apparatus. She had cooled her tongue with a solution of sodium carbonate followed by cold water. She has taken mercuric iodide in medium doses with quassia and describes herself as improving.

The condition appears to be a general absence of moisture from the mouth, with perhaps a slighter similar affection of the nose. One feels inclined either to attribute it to causes resident within the nervous system, or else to regard it as allied to those granular atrophic phases of deficient secretion met with in the nose, fauces, pharynx, and conjunctiva. Prof. Fraser's paper in the *Edinburgh Hospital Reports* for 1893 contains a table of the nineteen cases recorded up to that time.
St Clair Thomson.

Von Engelen.—*Adeno-Phlegmon of the Pharyngo-Maxillary Triangle. Drainage.*
Cure. Cercle Méd. de Brux., April 6, 1898; "Journ. Méd. de Brux.," May 19, 1898.

THERE had been tonsillitis of three weeks' duration; the tonsil was swollen and appeared to fluctuate. Incision of the tonsil reached no pus, but on cutting deeply behind the posterior border of the sterno-mastoid it was evacuated, and cure rapidly followed.
B. J. Baron.

NOSE, &c.

De Greift.—*Ozena.* "Annales et Bulletin de la Soc. de Méd. d'Anvers," Nov. and Dec., 1898.

FIVE forms of ozena are to be distinguished:—(1) Due to adenoids. (2) Due to sinusitis, with degeneration of the pituitary mucous membrane. (3) The necrosing form, the ethmoid being affected. Curetting is here the treatment. (4) Purulent form, with hypertrophy of the mucous membrane in children, and passing on to the next form—the (5) atrophic or true ozena.

Treatment must be according to the cause, *e.g.*, ablation of the mucous membrane, application of powders, antiseptic and irritant, spraying with solutions of nitrate of silver. Vibratory massage, electrolysis, antiphtheritic serum, injections of iodine.
B. J. Baron.

Guye (Amsterdam).—*The Plica Vestibuli and Indrawing of the Alæ Nasi.*
"Münchener Med. Woch.," June 28, 1898.

THE plica vestibuli is prevented from lying on the septum by the tension of the alæ nasi. This may be lessened in sleep or by paralysis; so that stenosis—which may be assisted by irregularities of the septum—is produced. This stenosis, owing to abnormalities of the septum, is usually more marked on one side, and is a frequent cause of disturbed sleep.

If the patient lies on the right side the right nostril closes; if on the left, then the left closes. He is compelled to lie on the side of the narrower nostril. If this closes, enough air is obtained through the other; if the wider nostril closes, nasal respiration is obstructed. The patient cannot fall asleep, or else he speedily wakes up again. If the right side is obstructed sleep must be obtained on the left side, which is usually more difficult, as the heart movements are more obstructed in this position. Tossing about from side to side then occurs, usually with interrupted sleep. Some overcome the difficulty by sleeping on their backs; but few can sleep comfortably in this position.

The author recommends a rubber ring with a diameter of ten to fourteen millimètres, a lumen of six to eight millimètres, and a breadth of two to six millimètres. It should be cut to fit irregularities of the septum. A thread may be attached to it to prevent it passing into the nostril during sleep.
Guild.

Hammond, L. J. (Philadelphia).—*Surgical Treatment of the Sinuses accessory to the Nose.* "Philadelphia Polyclinic," June 11, 1898.

IN a paper read before the Philadelphia County Medical Society the author deals at length with the treatment of chronic atrophic disease of these passages. He points out that disease in almost every case originates in the ethmoidal sinuses, spreading from thence into the sphenoidal and frontal. He does not consider the maxillary sinuses important factors in chronic atrophic disease, except in a secondary manner; they, are, however, more likely to be involved in acute inflammatory conditions. "Two forms of atrophic change take place within the mucous membrane of the nasal cavities that call for surgical interference: first, primary atrophy, the result of a depraved condition of the tissues as seen in strumous diathesis; second, that following hypertrophy, the latter less likely to at least primarily involve the accessory sinuses than the first mentioned, and is therefore more amenable to local treatment." In all cases which have passed the early stage he prefers to treat in a surgical manner. The patient is placed on his back and drawn to the edge of the table, so that the head can be dropped to an angle of forty-five to fifty degrees. The ethmoids are thoroughly explored by means of the blunt probe, and, after the carious area is located, all bare bone and granulation tissue is removed by means of a notch-shaped curette, the broken down necrotic tissue being syringed out at intervals with a warm boracic acid solution, the curetting being carried back as far as may be necessary. The author states that he has repeatedly removed the entire ethmoidal cell, and extended the curetting far back into the sphenoidal region with the happiest results. The after treatment consists in excluding the air from the nostrils by closing them with pledgets of sterilized cotton, and washing out the cavities twice in twenty-four hours for about six days.

StGeorge Reid.

Henderson.—*Notes on an Interesting Case of Naso-Pharyngeal Polypus, Successfully Removed.* "The Indian Lancet," June 1, 1898.

A YOUTH, aged nineteen. Patient was very anæmic, pulse weak and intermittent. The breathing was very laboured. The right half of the nose was completely blocked by the growth, which was about the size of an orange. On examination the growth was found to be protruding through the right posterior nares, occluding both the nares to such an extent as to seriously interfere with the respiration, occupying the superior aspect of the pharynx, and pushing the soft palate downwards and forwards. On digital examination the tumour was found to be soft to the feel in the front, but hard and ulcerated posteriorly. Some attempt at removal had already been made, and as the patient had lost a good deal of blood, he was put upon appropriate treatment and watched. Henderson considered two alternatives—(1) either to expose and remove the growth by performing an osteoplastic section of the superior maxilla after preliminary tracheotomy, or (2) to lay open the anterior nares by incising the upper lip in the median line, carrying it from the alæ of the nose upwards a little away from the median line, with an osteoplastic section of the nasal bone if necessary. It was decided to adopt the second and less extensive operation. The amount of space proved quite sufficient, and the tumour was removed with scissors, osteoplastic section of the nasal bone being dispensed with. The tumour was found to be firmly attached to the osseous surfaces surrounding the posterior nares, viz., the basilar process, the inferior surface of the sphenoid, the posterior part of the hard palate below the pterygoid process on the outer side, and part of the inner on the inner side. These extensive attachments were dealt with with ease.

No mention is made as to the nature of the growth.

MacLeod Yearsley.

Lenzmann.—*Septicæmia following a Furuncle of the Nasal Orifice.* "Münchener Med. Woch., June 21, 1898.

LENZMANN reported a fatal case of septicæmia which occurred in his practice. Woman, thirty-six, healthy constitution, developed a furuncle at the nasal orifice, where a small hair might have been removed. The next day the furuncle was redder and larger. An incision was made, when an opaque non-purulent fluid exuded. Fever increased, the frontal region became œdematous, and was incised on the fourth day. Patient became unconscious and weaker, and died on the fifth day. Numerous staphylococci were found in the furuncle and in the infiltrated soft parts on the forehead.

Guild.

Leyser (Darmstadt).—*Hypertrophy of the Pharyngeal Tonsil in Connection with the Hypothesis that its Radical Removal requires an Anæsthetic.* "Therapeutische Monatshefte," Dec., 1897.

IN this paper the author points out that we must reckon with the general risk attending chloroform administration, and in addition the special danger of aspiration. The duration of anæsthesia has no effect on the mortality. It cannot be denied that if repeated introduction of an instrument is necessary, the operation is sufficiently painful and prolonged to warrant anæsthesia. There are certainly children with whom one cannot accomplish this without force, but these also resist violently the administration of chloroform. Digital examination after three years of age is very seldom required by rhinologists who will use a little patience. The operator should not be like dentists and leave the question of anæsthesia to be decided by patients. He does not agree with Lenzmann that it is easy to arrive at that stage in narcosis where there is muscular relaxation and insensibility with retention of the pharyngeal and laryngeal reflexes. With the head hanging over there is greater safety, although the technique is more difficult and the hæmorrhage greater. A skilful operator can obtain good results with or without anæsthesia; the unskilful is not helped with anæsthesia, and the danger to the patient is increased. The radical removal does not depend on anæsthesia, but on a thorough knowledge of the anatomical conditions of the naso-pharynx and of the situation of the hypertrophy. For this knowledge of the anatomical and pathological conditions of the naso-pharyngeal tonsil we are indebted to Trautmann, who in 1886, from numerous *post-mortems*, which he confirmed in 1893 by a large series of new *post-mortems*, disproved the idea that hypertrophies develop on the lateral wall of the naso-pharynx, tube mouth, tubal prominence, and Rosenmüller fossa, and that those discovered there by posterior rhinoscopy or digital examination without exception are situated in the fornix. From this observation the possibility is deduced of removing the whole hypertrophy with one cut. Beckmann deserves the merit of having introduced a suitable instrument—a modification and improvement of Gottstein's—and of having proved its practical worth ("Transactions of the German Otolaryngological Society in Jena, 1895"). This method reduces the necessity of anæsthesia to a minimum, as only one introduction is necessary. The short duration of the pain does not require an anæsthetic; it is only required where otherwise direct force would be necessary. Failure is due to want of dexterity, not to want of an anæsthetic.

Guild.

O'Kinealy.—*Post-Nasal Growths—an Analysis of One Hundred Cases.* "The Indian Lancet," June 1, 1898.

IN this paper (read before the Indian Medical Congress) an attempt is made by an analysis of one hundred cases to ascertain the race distribution, age incidence, ratio for sexes, and the frequency and nature of the complications of post-nasal adenoids in reference to their occurrence in India. Such inferences drawn from

so small a number of cases can be but approximate in nature. The hundred cases occurred amongst a total of 461 patients of various nationalities treated during ten months for nose and throat affections in the Medical College Hospital, Calcutta. Post-nasal growths were thus 23·8 per cent. of all the patients, showing that they are not uncommon in Calcutta. The symptoms among the younger patients were those typical of "adenoids," in the older they were chiefly those of naso-pharyngeal catarrh. As regards *race*, for each native who suffered, the proportional number of Europeans with the same condition was over 2½. It is noteworthy that out of the 461 patients seen, 11 were Jews, and of these 6 had adenoids. *Age*:—Amongst the Europeans 52, and amongst the natives 21, of the cases were under 20 years of age—a total of 73 per cent. The remaining 27 per cent. were 20 years old or more. The youngest patient in each race was 3½ years old; the eldest was, among the Europeans, 31, and in the natives 35. The highest and lowest limits were: European males, 4 and 31 years. European females, 3½ and 21 years. Native males 3½ and 32 years. Native females, 8 and 35 years.

Sex.—In Europeans 41 out of 124, males; 20 out of 47 females; in natives, 30 out of 239 of the former, and 9 out of 51 of the latter sex. Relatively, however, it was found that among the Europeans half the females and one-third of the males suffered, while among the natives, approximately, a sixth of the former and an eighth of the latter sex were affected.

Under the head of complications the following troubles were included:—*Fauces* (enlarged tonsils, congestion and hypertrophy of the faucial pillars) found in 73 patients, 47 Europeans and 26 natives (32 males, 15 females of the former; 20 men, 6 women, of the latter). *Pharynx* (congestion or granular pharyngitis), 71 cases, 44 Europeans (28 men, 16 women), 27 natives (22 men, 5 women). *Nose* (hypertrophic rhinitis, septal deviations, crests, spurs, necrosis of the septum, nasal polypi, nasal papilloma), 60 cases, 32 Europeans (19 males, 13 females), 28 natives (22 males, 6 females). *Larynx*.—Although the larynx was not examined in every case, it was found to be in various stages of chronic congestion in 21 patients. Of these 8 were Europeans (males), 11 native men, 2 native women. One of the last had paralysis of the left vocal cord and left side of the soft palate. *Ears*.—Only examined when complained of. Ear trouble in 22 cases only (Europeans, 9 men, 5 women. Natives, 6 men, 2 women). Condition chiefly met with being "Eustachian catarrh."

[We cannot but regret that a more systematic examination of the ears was not made; probably a considerable number of ear troubles passed unrecognized.]

Tongue (hyperplasia of lingual tonsil, enlargement of superficial veins at root of tongue) 26 cases, Europeans, 9 males, 6 females. Natives, 9 males, 2 females.

Treatment.—The post-nasal growths were in most cases removed under chloroform by means of Lowenberg's forceps on Gottstein's curette.

The paper is illustrated by two tables, showing the proportion of cases affected to those examined, together with the race distribution, ratio for sexes and age incidence, and the number of patients affected with various complications.

Macleod Yearsley.

Röpe (Solingen) — *Radical Operation in Chronic Obstruction by Mucus and Suppuration in the Upper Accessory Sinuses of the Nose.* Vereinigung West Deutscher Hals- und Ohren-ärzte in Köln, April, 1898; "Münchener Med. Woch.," June 21, 1898.

THE author thinks that in almost every case of chronic empyema of the frontal sinus the ethmoid is also affected; therefore he recommends subperiosteal removal of the anterior wall of the frontal sinus, removal of the mucous membrane (Kühnt's method), broad opening and enlargement from the frontal sinus of the

diseased ethmoid. In double frontal empyema a horizontal incision is made from the outer third of the margo supraorbitalis to the corresponding point on the other side, with a perpendicular incision in the middle line. Skin and periosteum are reflected together, anterior wall of both sinuses with the septum and pars nasalis of the frontal bone are removed. He showed eleven cases; the cosmetic result was good with the exception of one case, where the cavity was abnormally large and deep. The patients have neither headache nor secretion from the affected cavities. Healing lasted ten days to six weeks. *Guild.*

Schiff, Arthur.—*Ueber das Vorkommen des Meningococcus Intracellularis (Weichselbaum) in der Nasenhöhle nicht Meningitis kranker Individuen Aus der III. Medicinische Universitäts Klinik, Wien.* "Centralblatt für innere Medicin," No. 22, 1898.

THE meningococcus intracellularis has been frequently found in the nasal secretion of these affected with epidemic cerebro-spinal meningitis.

In a case of supposed acute epidemic cerebro-spinal meningitis the author found in the nose numerous meningococci intracellulars, which were proved by cultivation and animal experiment. Lumbar puncture, however, showed tubercle bacilli, which was confirmed by *post-mortem* examination. This induced him to examine the nasal cavities of patients and those in good health for the relative frequency of this organism. The examination showed that the meningococcus intracellularis was present not infrequently in those who had not epidemic meningitis, when this disease was sporadic.

He examined twenty-seven individuals, some of whose nostrils were normal while others had slight catarrh. In seven cases microscopically more or less numerous intracellular diplococci were seen, which had the appearance of Weichselbaum's; but only in three cases were they so numerous that their pure cultivation could be effected. It must be noted, however, that they are difficult to grow on the usual nutritive media, and that on agar glycerine plates they can hardly be differentiated microscopically from other short bacilli. *Guild.*

Vansant.—*A New and Successful Treatment of Certain Forms of Headache.* "The Philadelphia Med. Journ.," May 7, 1898.

THE author of this paper directs attention to the treatment of headache by forcible syringing of the nasal accessory sinuses with a stream of hot, dry air (medicated in some instances) or nitrous oxide gas. He has found that frontal headaches in particular are relieved from this treatment, although some of the patients also referred the pain to the temporal regions or to the vertex, and in some instances the statement was made that the pain went all through the head, but was worse in the frontal region.

Vansant asserts that the relief from headache of even many years' standing, given by this hot air treatment, has been so quick and complete as to be, in some instances, "positively startling." The relief was complete and permanent after one or two treatments in some instances; in other cases a more prolonged treatment was required. Notes are given of thirteen cases, of which the following are brief abstracts :—

Case 1—Constant frontal headache and tinnitus aurium of over twenty years' duration in the case of atrophic rhinitis; permanent relief from the headache and tinnitus from one treatment. Female, aged forty-two.

Case 2 (a Physician)—Acute frontal sinusitis, with intense frontal headache of three days' duration; immediate and complete relief from one treatment. In this case nasal obstruction (septal deviation) closed the outlet of the frontal sinus, and confined the secretions in that cavity.

Case 3—Male. Dull headache, with confused feeling in the head, for two years, relieved in one treatment. Septal exostosis, hypertrophic rhinitis, granular pharyngitis.

Case 4—Frequent severe headache for several years. Result of treatment, marked improvement after several hot air applications. Female. This case also had nasal stenosis.

Case 5—Female, aged fifteen. Constant frontal headache for three years; permanent relief from one treatment. The removal of a large nasal polypus did not relieve the headache.

Case 6—Severe frontal and vertical headache, with excessive tinnitus and deafness of two years' duration. Complete relief from headache and tinnitus, with restoration of hearing to normal in three treatments. Female, aged twenty-five.

Case 7—Headache of from four to five years' duration, principally frontal, and associated with very severe tinnitus aurium. Relief from one treatment. Male, aged seventy.

Case 8—Intense frontal headache and severe tinnitus of six weeks' duration. Relief after a number of treatments. Female, aged forty.

Case 9—Intense frontal headache of long duration, associated with occipital headache, uterine disease and general debility. Complete relief from the frontal headache with one treatment. Female, aged forty-two.

Case 10—Severe frontal and temporal headache, associated with nasal polypi. Relief with one treatment. Male, aged thirty-three.

Case 11—Acute frontal headache, following a coryza. Relief by hot-air treatment. Female, aged thirty.

Case 12—Almost constant headache for more than a year. Relief in a few treatments. Female, aged nineteen.

Case 13—Severe headache, with acute inflammation of the left frontal, ethmoidal, and sphenoidal sinuses. Relief after hot-air treatment. Female.

It is to be noted that in nearly all these cases there was nasal obstruction present in some form or another. The forcible syringing of hot-air into the accessory sinuses caused, in many instances, a free serous discharge from the nostrils, which, however, did not last very long. Vansant points out both these facts, and states that he combines his treatment with the removal of any nasal obstruction present. He thinks the explanation of the relief caused by the hot-air syringing to be as follows:—The condition causing the headache consists in a blocking and stoppage of the small outlets to the sinuses or the small cavities within the sinuses; that this stoppage is followed, in some instances, by a retention of gases or fluids in these cavities; in other instances by absorption and rarefaction of the confined air, thus lessening the support of the atmospheric pressure to the walls of the bloodvessels, and causing chronic congestion of the mucous membrane lining the sinuses. The effect of the forcible syringing of these cavities with hot air is to open up these outlets, allow retained gases or fluids to escape, and to restore the equilibrium of the atmospheric pressure. When the outlets are once freed of their obstructions, they do not easily become obstructed again; hence the relief from headache was not only obtained quickly, but the good results of the treatment were lasting.

It is regrettable that Vansant has given no description of the technique of his treatment.

Macleod Yearsley.

LARYNX.

Cheval.—*Some Points in Connection with Pseudo-Membranous Affections of the Upper Air Passages.* "Journ. Méd. de Brux.," May 26, 1898.

CASES are quoted which lead to the following conclusions:—(1) There are three forms of exudation—the pultaceous, the membranous, and the gangrenous. (2) Naked-eye examination is not sufficient. (3) That certain diphtheritic cases may be cured spontaneously. (4) That we ought to use antitoxin in all suspicious cases. (5) Marmorek's serum is valuable in streptococcic cases, tonics and antiseptics being also used.

B. J. Baron.

Depage.—*A Case of Laryngectomy for Cancer.* Société Belge de Chirurgie, January 22 and 29, 1898.

THE operation was performed eight months ago; all communication between the trachea and the mouth was shut off. He speaks in a whisper, and there has been no recurrence. The trachea is attached to the skin to avoid all septic contact, and healing took place in ten days.

B. J. Baron.

Gardner, H. Bellamy.—*Obstructive Laryngeal Affections and their Influence upon Chloroform Anæsthesia.* "Lancet," June 11, 1898.

THE administration of chloroform to patients with a partial laryngeal obstruction is clinically a somewhat comparable procedure to the exhibition of nitrous oxide gas with small percentages of oxygen in surgical operations. The valuable experience gained in the gradual onset of symptoms due to reduction of the oxyhæmoglobin in the blood in these latter cases (easily rectified by increasing the supply of oxygen to be inhaled), has shown definitely that not only in theory is it possible to take advantage of these two factors in the respiratory and vaso-motor compensatory mechanism, but in actual practice the administrator can feel and perceive at every breath where the limits of this slight oxygen deprivation lie, and can detect by the depth of air-intake and tendency of facial colour the phenomena which will follow during several ensuing minutes. It cannot with certainty be stated that the elimination of carbonic acid gas is retarded in cases with mechanical obstruction in the air passage, but, as it is probable, the writer suggests a reference to the remarkable result obtained by Dr. Augustus Waller during his experiments as to the direct action of anæsthetics upon isolated nerve, which showed that when CO₂ was mixed with chloroform vapour in the gas chamber the recovery of electro mobility in nerve-tissue was more pronounced than after chloroform alone.¹ This bears very directly upon the cases related in this paper, and should be carefully investigated in future work. At this point the foregoing remarks should be clearly defined as a dangerous doctrine for any but those who are in constant association with the administration of anæsthetics. The actual fatal result of a more or less sudden obstruction to respiration during chloroform narcosis has been so frequently reported, and the warning is so thoroughly appreciated by all experienced administrators, that this paper cannot be misunderstood in merely offering an explanation of certain satisfactory symptoms in otherwise desperate cases.

StClair Thomson.

Heller.—*Foreign Bodies in the Air Passages.* "Münchener Med. Woch.," June 21, 1898, No. 26.

THE author recommends syringing of the naso-pharynx in order to produce forced expectoration, which is often successful in removing foreign bodies. It may also

¹ Dr. A. Waller, "Brit. Med. Journ.," Nov. 20, 1897, p. 1473.

be used to remove false membrane or accumulation of secretion. He describes three successful cases in which it was tried, one of which was a child, one year old, with a piece of almond impacted in a bronchus, where it had been for four weeks.

Guild.

Hopmann.—*Tumour of the Glottis removed by Thyrotomy.* "Münchener Med. Woch.," June 21, 1898.

THE author showed a girl, aged sixteen, who complained in June, 1897, of loss of voice, dyspnoea, and attacks of suffocation at night. The glottis was filled with a flesh-coloured, rough, dense tumour, the size of a cherry, which concealed the vocal cords. The tumour grew from the left towards the right side, with a broad basis, slightly movable, and could not be drawn into a snare or guillotine. It causes considerable stenosis.

After applying cocaine an attempt at removal was made with an endolaryngeal knife and forceps. The patient was unable to cough up the blood. She became unconscious from asphyxia. Tracheotomy and artificial respiration were done with success. Fourteen days later thyrotomy was done. The tumour was removed. The left vocal cord was divided, and was sutured with catgut after removal of the tumour and the part attached to it, which was principally the region of the left ventricle and false cord, as far back as the posterior laryngeal wall. Wound healed in fourteen days. Some months later there was slight cicatricial stenosis, which was overcome with Schroetter bougies. The girl speaks with a loud—somewhat hoarse—voice; respiration is quite free, and she is quite able to work. The laryngoscope shows extensive cicatrization of the left laryngeal side, and fixation of the cicatricially contracted left vocal cord and arytenoid (anchylosis spuria). On phonation closure is effected by the right vocal cord passing over to the left, which is fixed.

The microscope showed a non-malignant adeno-fibroma with the form of a papilloma—proliferation of the false cord with the formation of papillæ on its free surface. The papillæ are surrounded with a margin of stratified cylindrical epithelium. The tumour histologically showed an interesting analogy to the papillary proliferation of the inferior turbinate (soft papilloma, strawberry polypus). Papillary tumours of the larynx, especially of the false cords, consisting of cylindrical epithelium, are very rare. On the other hand, papilloma (hard), consisting of pavement epithelium on the vocal cords, are frequent, while in the nose they are rare.

Guild.

Kronenberg (Solingen).—*Stenosis of the Upper Air Passage.* "Münchener Med. Woch.," June 21, 1898.

A BOY, aged five, has severe attacks of suffocation, which constantly occur as soon as he falls asleep. Examination shows the child to be badly nourished, pale, and somewhat cyanotic. Chest barrel-shaped; heart displaced slightly to the right; larynx free. Numerous adenoids, which were removed. In spite of this attacks recurred. When awake breathing is quite free; the child is lively; there is no trace of dyspnoea in any position or movement. As soon as the child falls asleep the breathing begins to cease, evidently owing to some obstruction, in from one and a half to two minutes; it is absolute. The child awakes owing to deficiency of air, and the cycle is renewed. This goes on, with short interruptions, the whole night. It is worse in the dorsal position, but also occurs in every position. It is only relatively free in the prone position.

He attributes the condition to falling back of the tongue basis. Slighter degrees have been observed in badly nourished infants. He does not remember any case where the condition was so marked that there was danger to life. Central or

peripheral paralysis may be excluded, as when awake there is no trace of dyspnoea. The condition most closely resembles the difficulty in breathing in anæsthesia, where the tongue falls back. Here, also, if the lower jaw is pushed forward, the difficulty disappears. An instrument was designed to effect this. Galvanism was applied, the muscle tonus improved, and after a time the apparatus could be dispensed with.

Guild.

Manasse, P. (Strasburg).—*A Case of Double Cerebral Abscess, with Fistula into the Ventricles; Optic Aphasia; Recovery.* Arch. of Otol., April, 1898.

THE patient was a woman, aged forty-two, with old-standing otorrhœa and recent severe headache, vomiting, and fever, followed by loss of consciousness. The typical radical operation was carried out, and a puncture was made into the pulsating temporo-sphenoidal lobe, thick pus being withdrawn. The abscess was found to extend far backwards, and undoubtedly into the occipital lobe. After a few days considerable improvement had taken place; but aphasia was present in so far as when looking at objects she was unable to remember the name for them; whereas the sound produced by the object, or the sensations on handling it, enabled her to name it at once—that is to say, that the association between the appearance and the name was interrupted; whereas the association between the other qualities and the name was still intact. The natural supposition is, therefore, that the strands uniting the visual centre in the occipital lobe with the speech centre in the frontal were damaged by disease. This form of aphasia—"optic aphasia"—would indicate a lesion in the direction of the visual centre, and, in this case, a temporo-sphenoidal abscess that had extended very far back. On the seventh day, during the dressing, a large quantity of thick, offensive pus shot out on removal of the tampon from the abscess cavity; and, on insertion of the finger, it was found that there was a second cavity, lying far forward. This was opened more freely. Some days later a large quantity of light, clear fluid flowed out of the cavity; and, on illumination, a necrotic spot was found close to the posterior horn, having near it a small three-cornered slit, from which cerebro-spinalis fluid flowed out with each pulsation of the brain. Recovery ultimately ensued, in spite of the existence of this fistula communicating with the ventricles.

In regard to the interesting features presented by this case from the point of view of cerebral localization, the writer refers to an observation of Zaufal and Pick.¹ In their case—in which there was an abscess in the medullary substance of the left temporal lobe—there was optic aphasia, with slight paraphasia, sight being insufficient to guide the patient to the name of the object, and requiring to be assisted by both touch and hearing. In Manasse's case the patient could not name a bell when she saw it; but, as soon as she heard it ring, she named it at once.

Dundas Grant.

Munche, Prof. Schreck.—*Laryngitis Exudativa.* "Munchener Med. Woch.," No. 26, 1898.

LARYNGITIS EXUDATIVA has been used to embrace a series of affections. Miliarea (sudamina) were first described by Lori. They occur as small vesicles on the epiglottis and aryepiglottidean folds, causing smarting or the feeling of the presence of a foreign body. In acute or chronic catarrh pointed excrescences may occur corresponding to obstructed and dilated glands.

M. Schmidt has described cases of confluent vesicles with clear contents.

A better known eruption is herpes laryngis, usually accompanied by eruption on the skin or lips.

Varicella and variola are rare; they usually occur along with the skin affection or they may precede it.

¹ "Prager Med. Woch.," XXI, 1896.

In foot-and-mouth disease, or epidemic stomatitis, small vesicles form in the larynx, which burst and ulcerate.

Aphthous ulceration of the epiglottis and palate has been observed in cases of vulvitis and colpitis aphthosa.

Pemphigus is comparatively rare; it may be one-sided and confined to the larynx; disease of the skin may precede or follow it. The eruption usually heals without ulceration and cicatrization, but occasionally stenosis is caused by thickening, hypertrophy, or cicatrization after ulceration. The prognosis is usually unfavourable owing to relapses and long duration of the disease, which leads to marasmus or intercurrent diseases. A second group, without vesicles, is formed by urticaria, lichen, impetigo, and erythema. The symptoms of laryngeal urticaria depend on the size, number, and situation of the eruption. Smarting, hawking, hoarseness, loss of voice, and dyspnoea have been observed. Lichen ruber planus forms either bright red and thick nodes or flat plaques, which may be situated on the epiglottis or interior of the larynx. There may be disagreeable sensation on swallowing or speaking.

Impetigo herpetiformis is excessively rare. Seifert observed on the epiglottis plaques with irregular edges and greyish white covering, on removal of which an eroded surface was left. The edges of the plaques appeared somewhat raised above the mucous membrane. Quite as rare is erythema nodosum and multiforme. The infiltration may be absorbed or ulcerate. Erythema exudativa has also been observed with solid nodular infiltration, which became necrotic and ulcerated.

Guild.

Neuenborn (Krefeld).—*Stenosis of the Air Passage*. "Münchener Med. Woch.," June 21, 1898.

A PATIENT, sixty-one, had influenza, December, 1897; this was followed by dyspnoea, which made tracheotomy necessary in March, 1898. Epiglottis in the middle perpendicular, the large lateral portions acutely angular, hanging down, and shaky; by each inspiration they are sucked in so that the glottis is closed; on erecting the epiglottis with a sharp hook the stridor ceases. The vocal cords are white, about three millimètres from each other; voice is clear.

Diagnosis.—Paralysis of the aryepiglottidean muscles after influenza. The paralysis retrograded after the tracheotomy.

The term "aryepiglottidean muscles" is chosen with deference to the view of Moritz Schmidt ("Text-book," p. 14) that the oblique muscles are now mostly considered as the origin of the aryepiglottidean muscles.

Onodi, A. (Buda Pest).—*On the Voice Centre*. "Monats. für Ohrenheilk.," Jan., 1898.

THE existence of a cortical centre for phonation is generally admitted, and also the fact that this centre in each cerebral hemisphere acts upon both vocal cords. The occurrence of crossed paralysis of the cords from cerebral lesion is disputed. Onodi claims to have shown by experiment that (in the dog) neither unilateral nor bilateral extirpation of this cortical centre causes any permanent change in phonation. The whole brain above the corpora quadrigemina may be removed without destroying the voice. Loss of voice first appears when the brain is completely divided at the upper part of the medulla above the vagus roots. These facts go to show that the cortical voice centres play but a subordinate part, and Onodi considers that they justify the assumption of a subcortical centre for phonation, localized between the posterior pair of corpora quadrigemina and the vagus roots. The existence of such a centre explains the fact that the voice is retained after the cortical centres and basal ganglia have been destroyed or the entire brain above the medulla removed. It explains the occurrence of voice in children upon whom

perforation has been performed, and in monsters in whom the medulla is developed as far as the corpora quadrigemina.

Onodi concludes that it is quite impossible to localize, even approximately, a voice centre in the human brain.

Probably, in the dog the subcortical centres fulfil functions which in man belong only to the cortex.

P.S.—Onodi quotes a case of perforation in which the child breathed and cried. The brain had been cut off from the medulla at the level of the anterior corpora quadrigemina, much in the same way as in Onodi's experiment in the dog, the result of which it thus confirms for the human subject. *William Lamb.*

Verco, J. C. (Adelaide, South Australia).—*Foreign Bodies in the Air Passages.*

"The Australasian Medical Gazette," May 20, 1898.

NOTES of four cases of foreign bodies in the air passages.

The first, a girl aged three. A water melon seed remained in the air passages for three weeks, causing considerable cough. The trachea was opened, and the first cough expelled the seed through the opening.

In the second case a water melon seed remained lodged in the right bronchus of a boy, aged three, for five months, setting up severe symptoms. It was eventually spat up.

In the third case a tooth slipped into the larynx of a woman aged twenty-seven, and set up pleuro-pneumonia. It was coughed up after twelve weeks.

In the fourth case a woman, aged thirty-nine, was having some teeth extracted under gas when one slipped into the air passages. After giving rise to considerable trouble, it was coughed up after three weeks. The mischief it had started continued, however; the cough gradually got worse, with abundant muco-purulent fetid expectoration, and she eventually died from suffocation due to the bursting of an abscess in the right lung. *St George Reid.*

Von Stein and Juschzenkoff.—*Cystically Degenerated Neoplasms, surrounding Both True Vocal Cords.* "Monats. für Ohrenheilk.," Feb., 1898.

THE patient, a widow of fifty-eight, complained of attacks of dyspnoea, often with loss of consciousness and almost complete aphonia. Some emphysema and cyanosis. Ill eight years.

Larynx: False cords congested, with indistinct outline. Instead of the true cords, one sees two elongated oval swellings of a dirty bluish colour. They extend right up to the false cords and are hyperæmic at the base. During phonation the swellings come together and close the glottis, except for a little triangular interval, posteriorly. Examination with the sound shows that the tumours are soft and elastic, giving one the impression of greatly dilated veins. The base of each swelling is movable.

Anti-phlogistic treatment being ineffectual, ten per cent. cocaine was applied, and five pieces were removed with forceps. The tumours seemed at first to have disappeared; the true cords came into view, and the voice returned; but, two days later, the patient was completely aphonic; and, on examination, the true cords could not be seen, but instead of them were four strips or flaps of milk-white tissue, with red points here and there. On each vocal cord were two of these flaps or ribbons—one on the upper surface of the cord, the other on the under surface. During deep inspiration they could be seen to flutter in the air-stream. It was clear that the new formations were really two thick-walled bladders, surrounding the true cords and partly filled with liquid, as shown by the sudden collapse and disappearance of the tumours. When the remains of the bladder walls were swollen from inflammatory reaction, they became visible as flaps or tags of tissue

fluttering in the air-stream. These remains were partly removed by operation and partly coughed up.

Microscopic examination showed layers of squamous epithelium, with a small quantity of soft, gelatinous connective tissue, consisting of a stroma, insoluble in acetic acid, and cells, groups of red corpuscles, leucocytes, and cells with large nuclei. The authors conclude that the tumours had undergone mucous degeneration.

William Lamb.

E A R.

Alderton, H. A. (Brooklyn, N.Y.)—*Some Unusual Aural Cases.* "Ann. Otol., Rhinol., and Laryngol.," No. 1, 1898.

I. Case of *Diplacusis Binauricularis Echoica*.

Mr. Leslie M., aged twenty-seven years, an athlete rather over-trained, came to my office, November 23rd, 1897, complaining of deafness and tinnitus in the left ear, the deafness being noticed accidentally. On examination, he heard the watch twelve inches; whisper, forty-five feet; speech, forty-five feet; external ear normal; Mt. somewhat dull and thickened; Eustachian tube easily penetrated by catheterization, with no improvement to hearing. The Galton whistle was heard at the mark 1-10; Weber heard on vortex, forehead, and teeth, in the middle line, all better in the right ear.

Tuning-forks :

RINNÉ.	ac	ac	ac	ac	ac	ac
Schwabach { ac bc	20 11	16 3	15 4	50 6	62 13	40 27
T. F.	C-1	C	C1	C2	C3	C4

With the C3 fork by BC, when placed on the mastoid process of the left ear, two notes were heard (with the finger in the right ear to shut out AC), one a little later than the other; at the end of thirteen seconds the note heard by the left ear ceased, while that heard by the right ear continued to be heard for seventeen seconds more. The test was repeated a number of times, always with the same result. The C3 fork was the only one that gave such a reaction. Unfortunately, the patient, though unusually intelligent, because of a lack of musical ability was not able to tell whether the interval between the notes was harmonic or otherwise. The explanation seems to be warranted that the right ear heard the note as elicited, and, because of its superior functional ability, heard it across the head, even while the left ear was perceiving it; the pathological changes in the left ear were of a nature to alter the musical character of the note and to limit its duration, while at the same time delaying its transmission so that the effect of an echo was produced. Bone conduction throughout, except for the C4 fork, was reduced. We must, therefore, believe that we had to do with a change in the transmitting apparatus as well as of the perceiving apparatus, even though Rinné does not lend countenance to this stand.

II. Two Cases of Peculiarly Shaped Exostoses of the External Auditory Canal.

Case 1.—Bertha W., aged eighteen years, came to me January 13, 1898, giving the following history:—For six and a half months has had an occasional shrill whistling noise in both ears; hearing good; for two or three weeks some swelling and tenderness of the inferior maxillary articulation; itching in the canal. No

history of rheumatism in the family, but she herself has had rheumatic pains in the knees, etc. Examination A. D. :—Canal dry ; Mt. pale and the manubrium is very long, curved, and spatulate at its lower extremity. A. S., same. The point of particular interest was the existence of a sharply defined pyramidal exostosis on the superior portion of the posterior canal wall, about three millimètres in height and the same distance from the Mt., the apex pointing directly toward the short process of the malleus. It was a true cone, the base being vascular, the apex white as ivory ; the whole hard to the touch of the probe. There was no other abnormality about the canal, and there had never been any suppurative trouble. Evidently growth was still taking place at the pinkish, vascular base, whereas the apex was simply being pushed outward and had become ivory-like in look and consistency.

Case 2.—James P. O., aged forty years, referred to me by Dr. William Simmons, January 30th, 1898. Hardness of hearing in both ears for six years, with constant aggravated tinnitus in the left, following sea-water bathing. Gives rheumatic history ; never has had syphilis. Examination of A. S. :—Auricle normal, Mt. thickened, without showing any evidences of cicatrization ; watch heard $1\frac{1}{2}$ inches ; BC better than AC for the two lower forks ; duration of BC fair ; Galton $1\frac{1}{10}$; Weber equal. Description of right ear not pertinent. About two millimètres external to the bony edge of the pars epitympanica, and, anteriorly, is such another exostosis as in the previous case. The apex is white and hard, and directed a little inferiorly to horizontally backward, pointing toward the short process of the malleus ; the base is pinkish. The growth is also truly cone-shaped and about two to two and a half millimètres in height. The manubrium is not spatulate.

The rarity in these two cases consists in the peculiarly sharp cone shape, as occurring in the external canal ; those exostoses usually occurring in this region being much broader and mostly without the marked vascularity at the base, while those occurring on the pars epitympanica are, in the writer's experience, more or less pedunculated, or else similar to those in the other regions. No member of the New York Otological Society present at the meeting remembers to have seen a similar case. The other peculiarity is the absence of all cause for the growths, except that such might be attributed to the gouty or rheumatic diathesis, or possibly to sea bathing in the second case.

III. *Case of Marked Vertigo following Stimulation of the Nerve Endings of the Middle Ear, without any Change in Labyrinthine Tension.*

Female, aged thirty years, with an otitis media purulenta chronica of twenty-two years' duration. The carious ossicles were removed by the writer, and the stapes was in sight. Syringing or pressure on the stapes produced vertigo ; but, at times, so does an applicator armed with cotton, when applied under illumination to regions of the middle-ear cavity so far removed from the labyrinthine fenestra that it would be impossible to accept any disturbances of labyrinthine tension. There were no caries of the inner tympanic wall. This case is one evidently supporting Barr's theory.

This patient, on irritation, loses her balance and staggers, and would fall but for support ; the pupils dilate, and she has the feeling as though the eyeballs were turning round, though no such motion is perceptible to the observer ; there is a feeling of oppression in breathing, with sighing respiration ; the heart's action seems to be oppressive ; the pulse is not accelerated, but very much weakened ; a general feeling of great weakness follows ; the head cannot be kept still, but moves to and fro ; vision is, for the time being, greatly obscured. There is no twitching of the muscles.

One might think of hysteria or of epileptoid seizure in this case ; but the writer

thinks he is right in excluding these conditions here, after having very carefully observed the manifestations and causation many times. R. Lake.

Alt, Ferdinand (Vienna).—*On the Influence of Increased Intracranial Pressure upon the Sound-Perceiving Apparatus.* "Monatschrift für Ohrenheilkunde," March, 1898.

Post-mortem.—(1) The membrane of Reissner has been found depressed, and the ductus cochlearis reduced to a mere slit. (2) Infiltration—lymphatic or inflammatory—of the facial and auditory nerves has been found.

Clinically.—(1) Diminished hearing power for the higher musical notes has been observed, and (2) increased electrical excitability of the auditory nerve.

After stating Steinbrügge's and Asher's theories of the mode of production of the increased labyrinthine pressure, Alt points out that—

(1) In hydrocephalus it is not so much great increase of pressure that occurs as great variations in pressure.

(2) From the extremely varying development of the endolymphatic sac it is obvious that a sudden increase of intracranial pressure will be communicated much more quickly through the aquæductus cochleæ to the perilymph than it will through an ill-developed endolymphatic sac to the endolymph, so that in such a case the pressure of the perilymph will for a time considerably exceed that of the endolymph, and this condition may readily cause depression of Reissner's membrane. This is demonstrable in cases in which death occurs quickly after sudden and extreme œdema of the brain.

Frequent attacks or recurrences of high pressure, with the associated stasis, will injure the vascular walls, the delicate structures of the stria vascularis, and the membranous labyrinth, damaging the peripheral terminations of the auditory nerve. Too much stress must not be laid upon depression of Reissner's membrane; the essential thing is the mechanical injury of the organ of Corti and the inflammatory changes in the membranous labyrinth, and in the terminal nervous apparatus in the cochlea.

Increased intracranial pressure thus acts in analogous fashion upon the auditory and optic nerves, producing in the former case lymphatic infiltration and the changes just described, and in the latter case the condition of "choked disc."

Alt examined clinically many cases of brain tumour. Often there was no change in the perception of high and deep notes. With diminished perception of the upper limit of the scale there was always associated considerable shortening of bone conduction.

In other cases there was diminished perception of the lower notes. Sometimes the middle notes were best heard.

Electrical examination showed great variations in health; still greater in disease; but, upon the whole, increased excitability, with increased intracranial pressure.

Two cases of acute hydrocephalus are cited in which frequent transitory attacks of deafness and blindness were found (*post mortem*) to be due, not to changes in the auditory nerves, but to acute transitory œdema of the auditory and optic centres.

Hydrocephalus may also cause pressure atrophy of the auditory nuclei in the floor of the fourth ventricle, and flattening and wasting of the trunk of the auditory nerve. William Lamb.

Bell, J.—*A Case of Abscess of the Temporo-Sphenoidal Lobe Presenting Unusual Features—Operations—Recovery.* "Ann. Otol., Rhin., and Laryng.," No. 1, 1898.

A MAN, aged twenty-eight, was admitted to hospital August 30, 1895, to Dr. Buller's ward, Royal Victoria Hospital.

History.—Six years ago patient's ear first troubled him. It suppurated and left a permanent perforation of the membrana tympani. Since that time his ear discharged occasionally. Present trouble dates from July 1, 1895, with symptoms of pain, raised body temperature, headache; the mastoid was tender.

Sept. 1—Mastoid opened—no pus found. Sept. 2—Intense headache. High fever, 104°. Vomiting and beginning delirium. Sept. 4—Delirious in a quiet way. Vomited six times. Retraction of head. Neck quite rigid. Sept. 5—Photophobia, stupor and subsultus tendinium. Sept. 6—Same, with short shrill cry every few minutes. Sept. 7—Less crying. Less headache. Disposition entirely changed from that of a particularly quiet, modest man to that of an extreme boaster. Sept. 8—Pulse becomes slow (60). Temp. down, 99½. Dull mental condition. About this time paralysis of left side of face noticed. Retraction of neck still marked.

Transferred to Dr. Bell's Care.—Sept. 9—A man, of wiry build, with a condition of intelligence improved from what it had been for a few days, but still noisy and talkative at times, wanting to get up, etc., but can answer questions quite rationally. Severe headache on right side. Fundi normal. Movements of face weak on left side; retraction of neck prevented flexion of head. Noticed for first time, on morning of 9th, that the power of the left arm was almost gone—extensor paralysis at wrist with very weak flexion; at elbow very poor flexion with fair extension. Sensation impaired all over left arm. Power in left leg unimpaired. Pulse 50 to 60. Respiration normal. Over right mastoid region is the wound of first operation. Syringing through auditory canal causes flow of fluid from mastoid wound. There is subsidence of the inflammatory condition which had existed in neck below tip of mastoid, but with slight tenderness still remaining.

Operation.—Sept. 9—Mastoid incision continued upward to parietal eminence, and an incision at right angles to it, passing forward from its centre. Small piece trephined away one inch above zygomatic ridge, and opening enlarged by rongeur forceps. On opening through dura mater a flow of pus occurred (over 3 i). Rubber drainage tube inserted, and was brought through skin in front of ear. Trephine tore away a branch of middle meningeal artery, from which hæmorrhage was found difficult to control; forceps were left applied. A few sutures with iodoform gauze drain from behind. Sept. 10—Slept well. No pain. Can raise forearm and partially flex fingers. Face improved. Sept. 11—Rested well. Paralysis of extensors of wrist almost gone. Can flex elbow and extend it; can raise arm from shoulder. Sept. 12—Paralysis almost gone. Slightly restless. Dressing. Tube aspirated showed brain matter. Some pus drained out along forceps. Sept. 16—For past three to four days patient has been drowsy most of the time, though at times is cranky, difficult to manage, wanting to get out of bed, etc. Answers questions rationally, but takes a long time to do so. Restless at night lately. Second dressing; forceps removed and tube shortened. Sept. 19—Patient has been restless at night, and drowsy in morning; objects to being disturbed. Headache continuous; bowels much constipated. Quite rational, except on matter of getting up. Muscular power in arm and face quite restored. Sept. 21—Excessive headache past two days. Slow cerebration. Difficult to rouse now. Sept. 23—During past night delirious. Tore off dressing. Headache. Prominence noted at dressing. Sept. 28—Optic neuritis advancing in both eyes. Severe frontal headache past two days in mornings. Quite rational. With all this, no rise in temperature. Sept. 29—Afternoon, again delirious. Sept. 30—Dull and stupid. Pulse 48. Respiration 11.

Third Operation.—Wounds reopened and two abscess cavities found in temporo-sphenoidal lobe, one very small, the other about the size of a walnut.

Rubber drainage tube inserted and attached to skin. Oct. 3—Has been sleeping every night and is quiet and free from pain. Pulse 88. Temperature up a little. Oct. 10—Has slept from nine to six every night. No pain. Mental condition normal now. Oct. 13—Tube removed. Nov. 4—Discharged, with small sinus still present at lower end of wound. Has steadily improved in mental and general condition.

Bacteriology.—Cultures from abscesses, pure growths of the streptococcus pyogenes.

Re-admitted.—Jan. 17, 1896—Complaining of having had a fit a few days ago, and of a discharging wound in line of old scar.

History.—Since leaving hospital sinus has persisted in front of ear, with slight daily discharge, of late markedly less. Three weeks ago a small fragment of bone came away through small opening in line of scar behind ear; after this it closed up. After going home he was nervous and irritable for three weeks, but improving all the time. Since then he has done light work in the store, but no mental work. On Tuesday, the 14th inst., after a heavy meal, he fell down suddenly in a fainting condition and was unconscious for some time. Vomiting following, and headache. Felt well since. Patient thinks his mental condition fully as good as ever it was, but his mother finds him more hot-headed and self-willed than formerly.

Present Condition.—Small sinus. Probing reveals several small loose fragments of bone. No tenderness.

Operation.—Jan. 28—Sinus enlarged. Finger introduced enters cranial cavity and feels contracted remains of old abscess cavity. Long tube introduced well within cranial cavity. Jan. 29—Felt splendid all morning. Slight nausea at noon and vomiting at 2 p.m. At 2.45 p.m. became suddenly livid without any warning, and went into a short tonic spasm (almost opisthotonus), followed rapidly by clonic convulsive movements of legs, then of arm. Deep cyanosis. Patient turned on left side. Pulse 120, and regular. Slight frothing at mouth. Pupils slightly dilated and equal. Lasted two minutes. For ten minutes after breathing was very stertorous and noisy, and patient in deep coma; tongue protruding; spitting. At 3 p.m. vomited. At 3.30 p.m. conscious, rational, and feeling splendid. During same evening another similar attack. On February 2 another slight one, without loss of consciousness. March 7—Tube removed; discharge now very slight. March 21—Has been feeling well all along. To-day without prodromata, another fit, similar to former, and with conjugate deviation towards right side. April 7—Discharged. Sinus still discharging pus, but presumably from superficial tissues.

N.B.—Dr. Keenan saw patient June 30, 1897. Latter says his memory is a little weak, *e.g.*, can act as floor-walker in store, but not as clerk. Had only had one fit during summer of 1896; none since then.

Berens, T. P.—*A Case of Sigmoid and Lateral Sinus Thrombosis from Acute Suppuration of the Middle Ear. Operation; Relief. Subsequent Abscess in the Temporo-sphenoidal Lobe of the Brain; Operation; Death; Autopsy.**

"Ann. Otol., Rhinol., and Laryngol.," No. 1., 1898.

J. B., male, aged twenty. Two weeks before had noticed a slight pain and discharge in his left ear. Two days before his first visit the discharge ceased and the pain became steadily and rapidly worse. On examination: a small perforation in the anterior inferior segment of the drum membrane, which was congested and slightly bulging; mastoid process swollen and tender on pressure, not red; the ear not dis-

* Specimen presented and case reported to the New York Otological Society, Nov., 1897.

placed; slight vertigo; no chill; temperature 99° F.; pulse 80; bowels constipated. Calomel was administered and the hot douche and hot applications ordered for the mastoid. For three days the patient rapidly improved; thirty-six hours later he returned with severe pain, tenderness, and vertigo. Temperature 103° F.; pulse 100. This was at seven o'clock p.m. At midnight the temperature was 104° F. In the morning there was retraction of the head to the affected side, displacement of the auricle forward, much pain and tenderness on pressure over the mastoid region. Vertigo marked. No pain or tenderness in the region of the jugular vein. Left eye presented an inactive dilated pupil, distension of the retinal vessels, and slight optic neuritis. The mastoid was explored; no necrosis was found, but the parts were decidedly vascular, the wound in the bone bleeding profusely. Carrying the incision backward, the sigmoid sinus was laid bare and was found to contain a firm clot; with the rongeur the sinus was exposed from near the jugular bulb up into the lateral sinus. The vein was opened, but the clot was so firm that a curette was used to dislodge it. The slit vein was then packed with iodoform. The patient rallied well from the operation. The pupil of the eye reacted to light before he was well out of the influence of the ether. The temperature fell rapidly, and at the end of ten days he had made sufficient recovery to be allowed to walk about his ward. On the nineteenth day after the operation he had a rise in temperature, which was ascribed to an indiscretion in diet, and was relieved by a purgative. On the twenty-third day, temperature 103° F., slight occipital pain, nausea and vomiting. All reflexes and cerebation fairly active. Wound perfectly healthy, no pus, no exposed bone. His condition gradually grew worse. It was typically septic.

On the twenty-sixth day chloroform was administered, the wound was reopened, and after careful investigation the parts were found normal. The middle and posterior fosse of the skull were laid open by trephining immediately above the suprameatal triangle. The dura mater was of healthy appearance and not adherent.

The brain was explored. Nothing abnormal was found until the needle entered the region of the left lateral ventricle, when about two drachms of discoloured serum was withdrawn. This was supposed to have come from the lateral ventricle. The wound was dressed, and the patient rallied considerably for a few hours after the operation. The patient then grew rapidly weaker, and died thirty-eight hours after the operation. Immediately following the operation there was a spasmodic contraction of the right brow, rhythmical with the pulse. This was the only indication of central nervous irritation. The reflexes and cerebation were responsive until a short time before his death.

Post-mortem Examination.—Permission was given to examine the brain only. Excepting the wound in the bone, from the operations, nothing abnormal was found in the bones of the skull. The sigmoid sinus was found to have been opened almost to the jugular bulb below and upward into the beginning of the lateral sinus. The latter contained a firm clot to the torcular, and at this point there seemed to have been a fresh addition to the clot. The superior petrosal vein was occluded for its whole length by a clot. No pus was found. The pia and arachnoid were cedematous, the cedema being most marked posteriorly. There seemed to be a marked increase in quantity of cerebro-spinal fluid. The brain substance was very soft, although the examination was made only a few hours *post mortem*. The left temporo-sphenoidal lobe was red and very soft. In the centre of its apex was a small abscess one half of an inch in diameter. It contained opalescent, thin fluid, tinged with red. The track of one of the exploratory punctures was noted passing at the edge of but not entering the abscess. A few small hemorrhagic points were noted in the white matter of this lobe. The

ventricles were distended and the velum interpositum was cedematous and its veins congested. The mark of a puncture was found near the floor of the left lateral ventricle. Death seemed to have been caused by sepsis combined with oedema of the brain, softening, and abscess formation of the temporo-sphenoidal lobe.

R. Lake.

Brühl, Gustav.—*A Case of Death after Extraction of a Foreign Body from the Ear.* "Monats. für Ohrenheilk.," Feb., 1898.

A BOY of four and a half years stuck a stone in his left ear. Vigorous attempts at extraction with instruments, on the part of the village barber, caused some bleeding, great pain, and in due course suppuration. As there was much swelling, palliatives were applied (ice, carbolic, lead), till on the 16th day of treatment fœtor was noted, and feverishness. He was admitted for operation.

The auricle was turned forward, and the posterior wall of the membranous meatus was detached from the bone as in the radical operation. The stone was found to be of an elongated form, and to be lying across the end of the bony meatus, with one end jammed into the epi-tympanic recess towards the antrum, and the other end fixed in the hypo-tympanic recess, so that it was quite immovable. Part of the upper and posterior wall of the bony meatus having been chiselled away, the upper end of the stone was released, and the whole thing was easily washed out with a syringe. The malleus and incus were removed. On the sixth day after the operation he had a rigor and vomiting. Temperature 105°. Mastoid tender. No swelling of veins, retraction of head, or eye symptoms.

Considering that there was probably retention of pus in the antrum and thrombosis of the sigmoid sinus, the antrum was opened in the suprameatal triangle, the posterior and upper wall of the bony meatus was removed, and also sufficient of the mastoid process posteriorly to expose the descending part of the sigmoid sinus. As the sinus wall looked normal, more bone was removed; superiorly as far as the turn into the transverse sinus, and inferiorly almost to the tip of the mastoid process. Above part of the tegmen tympani was exposed: the dura mater was normal. Three days later the child died. *Post-mortem*: Thrombo-phlebitis of left transverse sinus, pleurisy, and pulmonary abscesses.

One half centimètre below the lower edge of the wound in the bone the sinus was thrombosed; also a small vein running through the suture between the mastoid process and the occipital bone.

The middle ear was full of pus and granulations, and it seemed probable that there had been an old otorrhœa. The promontory and jugular fossa were uninjured. Masses of micrococci were found in the pus.

The stone blocked the exit for pus, and from this pent up pus particles were carried through the veins of the bone to the sinus, where they set up an infective thrombosis.

The case emphasises the necessity of prompt operation in cases of pent up discharge.

William Lamb.

D'Hoore.—*A Case of Mastoiditis resulting from Acute Middle-Ear Inflammation.* "La Belgique Médicale," Jan. 20, 1898.

ENERGETIC treatment to ensure free drainage of the pus that forms is advocated. The differential diagnosis between the acute median otitis and the osteitis that may accompany it is given.

B. J. Baron.

Eulenstein, H. (Frankfurt-a.-M.).—*Contributions to the Knowledge of Pyæmia.* "Arch. of Otol.," April, 1898.

EULENSTEIN calls attention to Leutert's observations on parietal thrombosis in sinuses as the beginning of otitic pyæmia. He quotes two cases, one of which

died with symptoms of pyæmia. On *post-mortem* examination the outer wall of the right sigmoid sinus was found to be unevenly thickened and covered with tough granulations, and in a corresponding position in the inside there was an elongated thrombus with a broad base one and a half centimètres long, which projected into the lumen of the sinus, and in its central portion was necrotic and purulent. In the second case the patient recovered. In the course of the operation the sinus was freely exposed, and its wall was found to be thickened and covered with granulations for one and a half centimètres in length. Fever of pyæmic type persisted for several days after the operation, but there was no evidence of total sinus thrombosis or its consequences. The author considered three conditions possible: osteo-phlebitic pyæmia, thrombosis of another sinus, or a parietal thrombus of the sigmoid sinus. In view of the abnormal appearance of the wall of the sigmoid sinus, he considered the last-named condition the most probable, in the light of the *post-mortem* appearances in the former case.

Dundas Grant.

Hennebert.—*Some Complications of Suppurative Otitis.* Cercle Méd. de Brux., April 1, 1898; "Journ. Méd. de Brux.," April 14, 1898.

THE first case was that of a man aged twenty-one years, the attack supervening on the eruption of a wisdom tooth. There was perforation of the membrana tympani with severe general symptoms, and œdema of the eyelids and exophthalmos. A hard cord formed by the jugular vein was felt in the neck behind the carotid, and there were flying pains in the joints. Large doses of quinine were of much value.

The second case was that of a child eight years old, where scarlatinal otitis was complicated with double parotitis, and œdema of the mastoid and periostitis of the external meatus, with narrowing of the canal.

The third case was a mastoid abscess complicating the middle ear mischief. The first case is attributable to phlebitis of the jugular vein, and of the lateral sinus with pyohæmia.

B. J. Baron.

REVIEWS.

Williams, Watson P.—*Diseases of the Upper Respiratory Tract: the Nose, Pharynx, and Larynx.* Third edition. (Bristol: John Wright & Co.)

IT has been often remarked, and with great truth, that there is no better proof of the merits of, as well as the demand for, a book, than the rapid reappearance of subsequent editions.

Dr. Williams has brought out a third edition within four years. It is not to be wondered at, for the book is eminently practical and clear, and well and interestingly written, with the needs of the readers kept carefully in view.

This is the chief essential in any work which professes to be one to which the busy practitioner can turn, and find, without undue loss of time, a description of a disease and hints as to its treatment. There is nothing, perhaps, which is of greater service than a moderate number of recipes. Dr. Williams appends a useful list, and alludes to them by numbers in the text.

The illustrations are admirable, and the more to be valued as they are all from the skilful pen and pencil of the author. Illustrations are valuable in teaching and in assisting in diagnosis. One drawing is wrongly described, and has been in the previous editions, viz., Fig. 110. The polypus is on the patient's left, not right, side.

In conclusion, we can thoroughly recommend this work as being one of value to all interested in laryngology, especially to general practitioners and senior students.

Sajous.—*Sajous' Annual and Analytical Cyclopædia of Practical Medicine*. Vol. I. 1898. (Philadelphia : The F. A. Davis Co.)

THIS is Sajous' Medical Annual redivivus. And since the last edition, viz., 1897, was issued, the editors and publishers have thrown themselves body and soul into the work. The results reflect the greatest credit on one and all concerned in its production. It is a veritable library of reference. To the practitioner it is the year book of treatment. To the author it is the *annus medicus* and reference library in one.

The contents are grouped under two heads, as it were : the essentials of treatment and discovery are printed in large type ; the remaining literature is reviewed in smaller type ; the idea being that the busy man has the main points laid out for him, and so saves his time and ensures his missing nothing of real import.

It is the most ambitious annual work issued in the language ; it promises to reassert its old superiority. We cordially advise the purchase by all who can, of so magnificent a library as the annual purchase of this would give. Assuredly no library can afford to be without it and not be reckoned antiquated.

Stokes, Sir William.—*William Stokes : his Life and Work*. By his Son, Sir WILLIAM STOKES, Surgeon in Ordinary to the Queen in Ireland. London : T. Fisher Unwin. (Vol. IV. "Masters of Medicine.")

EACH succeeding volume of this series brings forth fresh feelings and fresh interests. Not only is our national pride awakened by the contemplation of the lives and works of these truly great men, but our pride of race receives that fillip which prompts a fraternal emulation between Scot, Celt, and Saxon. Whilst we admit the plea put forth by the author of this biography, that his very relationship places him at a disadvantage, yet we must express our conviction that from no other pen should we have obtained so excellent a life history.

Stokes rendered himself first known, then for ever, by his lectures on "The Application of the Stethoscope, etc.," although he had already a few years before, as a mere student, published a short treatise on the same subject. He did more than anyone to render clinical instruction capable of fulfilling the end in view by teaching the individual and not the average student. He was a widely gifted man, and it is wonderful to see how he found time to cover so extensive a field as he did. This is a book which should commend itself to all, and one which will find an honoured place in every well-equipped medical library, be it public or private.

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Digestive Ferments in Diseases of—COHEN-KYSER, La Pratique Médicale, No. 1 and 2, '98. *Surgical Treatment of Chronic Dry Catarrh*—MOURE, Rev. Heb. de Lar., May 28, '98. *Sclerosis treated with Thyroid Tabloids*—EITELBERG, La Pratique Médicale, Nos. 3 and 4, '98. *Suppuration of, during Broncho-pneumonia*—LATALLÉ, Rev. Heb. de L., O., R., Nov. 27, '97. *Sympathetic Otitis*—RAUGÉ, Presse Méd., Oct. 30, '97. *Case of Acute Otitis complicated by Retro-pharyngeal Abscess*—F. STILLMAN, N.Y. Med. Journ., Feb. 6, '97. *Suppurative Mastoiditis*—J. S. ROBERTS, N.Y. Med. Journ., May 22, '97.

DANGEROUS SEQUELÆ.

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XIII.—ROENTGEN RAYS.

Radiography of the Cranial Cavities—GLOVER, Arch. Inter. de L., O., R., Nov., '97; SCHEIER, Arch. Inter. de Lar., IX., '96. *Further Communications*—SCHEIER, Arch. Inter. de Lar., Mar., '98. *Researches on the Anatomy of the Head by means of*—REGNIER, GLOVER, Rev. Hebdom. de L., O., R., Jan. 15, '98.

XIV.—MISCELLANEOUS.

Importance of Urinalysis to Laryngologists—MULFORD, Laryngos., II., '97, 96. *Localization of the Centres for Hearing, Phonation, and Reflex Movements in the Posterior Corpora Quadrigemina*—BEKTEREFF, Presse Méd., Nov. 17, '97. *Incandescent Light Current for Galvanism, etc.*—OAKES, Laryngos., II., '97, 305. *Laryngeal and Post-Nasal Photography*—T. R. FRENCH, N.Y. Med. Journ., Jan. 23, '97.

ERRATA.

WE beg to correct the following errata which have unfortunately found their way into Dr. Sendziak's contribution, pages 276 *et seq.*

- Page 276. Line 18 from the bottom, for "perforation of the middle ear, membrana tympani," read "perforation of tympanic membrane."
 - Page 277. Line 10 from the bottom, for "chlorine" read "chinine."
 - Page 278. Line 12 from the top, for "Cras and Tinbert" read "Cross and Imbert."
 - Line 13 from the top, for "Miroljubon" read "Mirs-Gubow."
 - Line 17, for "pulmonary oedema" read "laryngeal oedema."
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THE
JOURNAL OF LARYNGOLOGY,
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SOCIETIES' MEETINGS.

BRITISH MEDICAL ASSOCIATION.

Annual Meeting, Edinburgh, 1898.

ABSTRACTS OF PAPERS.

SECTION OF LARYNGOLOGY AND OTOTOLOGY.

PRESIDENTIAL ADDRESS BY P. McBRIDE, M.D., F.R.S.E.

The Expansion of Laryngology and Otology.

The time is long past when there was a necessity for defending the existence of laryngology and otology as special branches of study. It used to be said by the opponents of specialism that it tended to a narrowing of the mental horizon on the part of its votaries. The inclination now is rather to complain that the surgical limits of our specialties are being unduly extended. Indeed, I have been told that a well known teacher of surgery in this school is in the habit of demonstrating a very small region in the neighbourhood of the umbilicus, which, in the near future, will represent the region upon which the general surgeon will still continue to exercise his skill. Experience has shown that no charge of mental narrowness can be brought against the best workers in our specialties, but the danger of excessive extension is perhaps more real. Let us consider first how easy it is for the laryngologist gradually to extend his field, both on the medical and surgical side. You are all familiar with the indications of general disease, which are often first detected by the laryngoscope. We discover, it may be, some lesion of

the chest, nervous system, or even kidneys, which we feel ourselves perfectly able to treat, and so, unless the laryngologist be careful, he may be led to encroach seriously upon the domain of the general physician.

Turning now to the surgical aspect of the same specialty, the old rule used to be to call in a surgeon when external incisions were required. Of course to carry out this absolutely would be impossible, for tracheotomy is an operation we must all be prepared to perform when the indication is urgent. The laryngologist of to-day, however, does not confine himself to this. He performs thyrotomy and excisions, removes goitres and sometimes cervical glands, so that he thus annexes as it were a considerable portion of the general surgeon's territory. If these operations are to come within our sphere of work, then it almost logically follows that we shall in the near future undertake external operations on the œsophagus and stomach, as well as extensive dissections involving the removal of tumours from the neighbourhood of the large vessels of the neck.

In otology there is the same tendency towards extension on the surgical side. Thus the aurist no longer fears to open the cranial cavity nor does he hesitate to perform such operations as ligature of the internal jugular; he has not, however, the same direct temptation as the laryngologist to enlarge his field at the expense of the physician. The same expanding tendency may be observed, too, in connection with the nose, although here there is not quite the same scope. I am content, gentlemen, to place these facts before you. There is a good deal to be said for and against this growing desire of the younger specialties to annex fresh territory. It is a question for each one of us to decide for himself how far he shall take part in this policy of expansion. Only if it creates against us a certain feeling of antagonism on the part of consulting physicians and surgeons we must not be surprised, and I think much could be done towards mitigating such antagonism by taking care that our position—be it in the van or rear of this movement—is logically unassailable.

Another direction in which our expanding tendencies have manifested themselves is in our immense literary activity. I suppose I shall not be considered far wrong in saying that most of the best that is written sooner or later finds its way into English, French, and German, as being the most widely known languages, although I am well aware that much excellent matter makes its first appearance in Russia, including Poland, Scandinavia, Denmark, Holland, Spain, and Italy. To most of us, however, only those works which appear in the three languages first referred to are accessible. It may not be uninteresting to glance for a moment at the most striking national peculiarities of our literature. The Anglo-Saxon writer (whether European, American, or Colonial) usually aims at brevity, and, on the whole, I am inclined to think that there is a slight tendency to put points of purely scientific and theoretical interest on one side in favour of the more directly practical, and in some cases to dispense with all literary references to the subject treated of. In striking contrast to the Anglo-Saxon is the German author. In his work we find the most elaborate attention to detail, and a very strong

tendency to discuss the subject from every possible point of view, and even then not always in the fewest possible words. His literary references to the works of his compatriots are generally full and accurate, but this cannot always be said of those to foreign literature, and, withal, he is not over tolerant to the foreigner who overlooks a Teutonic authority. Moreover, there is among Germans a great tendency to polemic writing, and sometimes even to personality. With all these drawbacks, however, we must admit that the best literature in our specialties at the present time emanates from Germany. It may be because of the large number of workers, or due to greater facilities afforded by the Government and circumstances of the country, but the fact remains. As we all know, many excellent works emanate from French pens, and in the absence of polemical writing we have reflected the racial courtesy. It has sometimes appeared to me as if the amount of material did not quite justify the existence of all the journals which are devoted to our specialties in that language, but the frequent appearance of excellent, interesting and original articles in all of them must be fully admitted. In speaking of French journals, however, I cannot refrain from noticing the odious custom of interleaving advertisements with the text—a practice which certainly cannot conduce to the dignity of medical journalism. Let us now turn from national to individual characteristics, for in the study of the individual we come nearer the forces which make for and against expansion.

The first and best type of author is undoubtedly represented by the man who has really something new and valuable to communicate. It may be the result of scientific research, or of clinical observation, while sometimes it takes the form of valuable generalizations from the collected work of others.

There are, however, besides, numerous and less praiseworthy types. We all know that often diseases which are least amenable to treatment are those for which innumerable curative agents have been recommended, and further how each new remedy is said to be followed by numerous successes, often occurring only in the hands of its inventor. When the method employed is harmless little mischief results, but when operative measures are advocated in this way a grave evil arises. A danger of specialism has always been the tendency of some specialists to magnify the importance of the part of the body with which they are familiar, and I do not think that otology, laryngology, and rhinology can plead that their votaries have been altogether guiltless in this respect. Specialism is only good so long as it rests upon a broad basis of anatomical, physiological, and pathological facts, and so long as no attempt is made by writers to juggle with these facts in order to elevate the part at the expense of the whole. It would be ill-judged to give any examples, but no doubt works will occur to some here in which this mistake has been made.

Far be it from me to suggest that there are many writers who indulge in misrepresentation. Absence of the highest critical faculties, and a limited knowledge of general medical and surgical science sometimes associated with an almost morbid desire to magnify the importance of a

special organ, account for much writing which is ill calculated to bear the clear light of criticism.

Again, what I may call undue therapeutic credulity is responsible for much that is worthless to science. It is but rarely, I trust, that lower motives, such as a desire to establish a temporary notoriety, and to benefit directly therefrom, actuate authors in our specialties. Still, it must be remembered that we are but human, and that there is no more certain way of establishing a reputation of a sort than by originating some new and startling theory, remedy, or operative procedure. Under these circumstances, would it be surprising if some driven by vanity, and others spurred on by hopes of aggrandizement, were to fall before the temptation?

Let us finally turn to another great difficulty which has arisen of late years, and which confronts the serious student not only of laryngology and otology, but of almost all branches of medicine and surgery. It is, of course, necessary for every specialist to follow the literature of his subject, but perhaps the burden falls most heavily upon those who are engaged in lecturing, and upon writers of text books. All of you know how voluminous are the works devoted to our specialties; you are aware of the numerous journals which appear in French, German, and English; there is further a considerable array of monographs, and finally we have an ever increasing number of text books. All this bears very heavily upon the conscientious reader, for it must be remembered that until a work has been read it cannot be classified or criticised. No separation of "wheat from chaff" is therefore possible without an immense amount of wasted time and energy. Among our large current literature there is much that is good, but more that is valueless. This may seem a rather sweeping statement, but if you will throw your mental glance back over recent years and compare the actually valuable additions to our knowledge with the amount written in the same period, I am sure that you will agree with me that they are not proportional, indeed we might be not far wide of the truth in calling them inversely proportional. It may be urged that the system of abstracting papers, now so largely in vogue, is of value in saving time and labour to the over-burdened worker. No doubt this is to some extent true, and certain journals are, by employing a carefully selected staff, enabled to present an epitome of all that is being done in various parts of the world. It is, however, necessary to warn readers that such abstracts are by no means always correct representations of authors' views, and it is perfectly certain that some periodicals which profess to give abstracts of current literature are lamentably defective, in so far that they confine their attention to reviewing only articles which appear in a few of the better known journals of each country. I have thus merely outlined some of the difficulties which every experienced reader can fill in and amplify for himself. The important question I wish to bring forward is: Can this be remedied? It appears to me that it might be by adopting some such method as this:—

1. The establishment of a body composed of men of ripe experience and wide reading in each country, equivalent in position to the collaborateurs of the "Centralblätter" and journals of to-day.

2. The selection of two or three of those collaborateurs to form a small central committee in each metropolis.

3. The employment of a staff of abstractors composed of young workers.

The advantages of such a scheme would be obvious. The collaborateurs would each have assigned to them certain journals, and it would be their duty to send in a return to the central committee indicating the names of the papers which were considered worthy of a place. The list so accumulated would be again checked by the central committee, and in this form handed over to the abstractors.

It will be seen that the adoption of some such method as this would produce a periodical of reasonable dimensions, because many published works would probably be rejected by those responsible for selection. Of course, we have something similar in the various year books, but it must be remembered that the reading specialist can hardly accept any single author as his guide, while, on the other hand, he might be quite satisfied to have the important works chosen for him by a strong, responsible committee of each country.

In conclusion, I beg to say that I desire in no sense to reflect upon the excellence of works which endeavour to give, and in some cases actually do give, abstracts of nearly all papers which are written on our subjects. In doing so, however, they must give the bad with the good. Although every now and then we find a writer, bolder than the rest, who describes a paper as containing nothing new, yet a desire to avoid discourtesy prevents this being frequently done. If it were once understood that only papers of importance were to be abstracted an immense amount of space would be saved, and a most valuable publication would result, which, if it were published in English, French, and German, ought to be commercially, as well as scientifically, successful.

SIR FELIX SEMON. *The Mutual Relationship and Relative Value of Experimental Research and Clinical Experience in Laryngology.*

In his introduction the speaker described the discrepancies of opinion concerning this question at present existing amongst laryngologists, and humorously depicted the gradual shades of opinion—from the extreme right wing, the “stern, unbending Tories,” representing those clinical laryngologists who did not believe in the value of experimental research at all, to the radical left, or the “stalwarts” of experiment, who looked upon clinical experience as mere “bag and baggage.” He himself confessed to belong to the “centre” party, *i.e.*, those who from experience of their own had arrived at the conclusion that both methods “properly applied are extremely valuable, that neither of them is infallible, and that in each individual question which appears to come under the sway of both of them it must be left to individual judgment to determine the comparative value of each.” This thesis the speaker supported by a rapid survey of the achievements, the failures, the applicability, and the sources of error of each method. It was first shown by a series of illustrative examples that the clinical method, whilst usually most successful in determining, not merely the nature of most local affections of the larynx, but also of grave constitutional disease in distant parts, yet

in not a few instances did not suffice for the establishment of a positive and certain diagnosis, and that in other cases, even when showing the nature of the disease, it did not give an explanation of its causation. It was further pointed out that even the employment of all modern accessory methods of investigation (microscopy, electricity, bacteriology, etc.) did not afford guarantee of an absolutely reliable conclusion in many instances. Hence the desirability of further help in that respect was unreservedly admitted, and the importance of experimental research in view of the progress obtained by its employment in so many other branches of medicine was duly emphasized. At the same time, the question was asked whether its results so far obtained with special regard to laryngology had been of so universally reliable a character as to justify its laying down the law to clinical laryngology. In reply to this, the principal experiments referring to special laryngological subjects were passed in review, and it was shown :—

1. That the applicability of experimental research in laryngology had been so far very limited.

2. That in certain instances its results had undoubtedly been decisive, and of great importance to clinical progress (*e.g.*, in the questions of extirpation of the larynx, of the special representation of the larynx in the cerebral cortex, of the existence of the reflex-tonus of the dilator muscles of the glottis during quiet respiration, etc.).

3. That, on the other hand, its employment had in various questions not only not cleared up previously existing difficulties, but had, on the contrary, increased them.

4. That the experimental method had so far failed in elucidating some of the fundamental laryngological problems (*e.g.*, the question of the ultimate origin of the recurrent laryngeal nerve ; the question whether this nerve contained centripetal fibres, etc.).

In continuation of this argument it was pointed out that in purely *pathological* experiments, *i.e.*, in the imitation of pathological processes by experimental research, the results had been even less satisfactory, inasmuch as in the two most important attempts of that kind which have so far been made—Krause's attempt to experimentally imitate the pressure of a growth upon the recurrent laryngeal nerve, and Klemperer's injection of pathogenic micro-organisms into the laryngeal areas of the cerebral cortex—the results had caused an augmentation rather than a diminution of the discrepancies of clinical observers on these important points. The speaker endeavoured to explain this by enumerating the various and grave sources of error in experimental research with which he had become personally acquainted, and from this drew the conclusion that there were four general principles which ought always to be remembered when experimental research was resorted to for the solution of laryngological problems, *viz.* :—

1. What was the question to be solved ?

2. What was the method of the experiment undertaken for its solution ?

3. What were its possible or probable sources of error in the individual case ?

4. Who was the experimenter?

In support of these propositions he pointed out :—1. That not all questions in which the help of experimental research was invoked, were equivalent and equally suitable for experimental investigations. 2. That there were enormous differences between the methods of various experiments. 3. That the sources of error encountered in certain experiments were so manifold and so great as to entirely spoil the application of their results to apparently analogous conditions in man. 4. That a rare combination of qualities was required to make a successful experimenter. The conclusion ultimately arrived at was a re-affirmation of the speaker's conviction expressed eight years ago in the "Virchow-Festschrift," and couched in the following terms :—

"Many years' clinical and experimental investigation leaves no doubt in my mind that in these questions experiment cannot lay down the law to clinical observation, nor clinical observation to experiment. I feel equally certain there is no incompatibility between them, that the one completes the other, and that whenever a contradiction seems to arise the conflict is only *apparent*. With sufficient patience and care it can always be traced to defective clinical or pathological anatomical observation, to faults in the experimental method or to an incorrect way of stating the problem."

IN RHINOLOGY.

(Read by Title.)

Dr. GREVILLE MACDONALD : Mr. President and Gentlemen,—For a discussion of the sort which we have before us I cannot help feeling that no region in the body could afford us better grounds for statements of the two sides of the proposition than the nose; and especially for this reason, that, long before any experimental investigation had been made concerning the functions of the nose, it was generally admitted, on theoretical grounds, perhaps rather than from actual observation, that the function of the Schneiderian was to warm, moisten, and filter the inspired current of air.

It is only within the last few years that the nose has been studied, even clinically; and I suspect the immediate consequence of inquiry into the etiology and pathology of nose disease, and more especially into the bearing of the latter upon affections of the throat, immediately indicated the desirability, if not the necessity, of some more accurate information as to precise physiology. We had observed how frequently chronic pharyngitis and laryngitis were associated with nasal stenosis, and had suspected that this was primarily due to the fact that these regions were compelled, from the enforced mouth-breathing, to warm and moisten the inspired air, although all unfitted for such duties, and to capture irritant particles from which they should have been protected. We had, moreover, observed how, in dry conditions of the nasal mucous membrane, we often found a tendency to that partial inspissation of the laryngeal and tracheal secretion, which is one of the most troublesome conditions which we are called upon to treat. So far our surmises were perfectly correct; but until accurate experiment had been made we had not the faintest

conception of the vast importance which we are now compelled to ascribe to the nasal function. Physiological text-books, for instance, still instruct the unsuspecting student as to the enormous quantity of aqueous vapour exhaled by the lungs; but we now know that the inspired current of air, even when previously artificially dried, is entirely saturated with moisture before reaching even the pharynx. Physiologists also tell us of the difference in temperature in the inspired and expired air, generally without being aware that almost the whole of that heat, not forgetting the enormous amount rendered latent by the vapour absorbed, is yielded by the nasal mucosa.

It is altogether unnecessary to enlarge upon these points before a meeting composed of such distinguished gentlemen as I have the honour to meet on this occasion. We are all informed of the experiments of Aschenbrandt, Keyser, and Bloch. These are familiar to us all. To quote precisely from my own investigations, it was found that:—

At + 0.7° C.	the temperature was raised to...	28.8° C.
„ + 1.7° C.	„ „ „ „ „...	35° C.
„ 12° C.	„ „ „ „ „...	35.6° C.
„ 45° C.	„ „ „ reduced to ...	33.6° C.

And that, as far as the humidity of the air is concerned, in every instance, although experimenting with air artificially and absolutely dried, it was shown that, whatever the external temperature, the saturation with aqueous vapour was complete. It was concluded that the amount of moisture taken up by the inspired air varied (a) with the rapidity of the inspiratory act; (b) with the degree of patency of the nasal passages; and (c), let us note most emphatically, with the degree of turgescence of the erectile tissue. I lay stress upon this last point, and consider myself justified in referring to my own small contributions to physiology, partly because of the importance of the fact in relation to pathological conditions of the erectile tissue, and still more by reason of the reckless manner in which the inferior turbinated bodies are condemned by certain rhinologists to the most ruthless eradication.

If we will only remember that when the erectile tissue is collapsed less than one-half the usual amount of aqueous vapour is given off from the nose, it will surely appear that by the operation of turbinectomy the nose is being deprived of one of its most important structures from the functional point of view.

It is a little curious that many who proclaim most loudly the importance of easy nasal respiration should be the first to be willing actually to deprive the nose of the very structure to which it mainly owes its virtue.

So far, I maintain that clinical observation actually forestalled experimental discoveries, the special merit of the laboratory investigations lying in their confirmation of conclusions drawn from the study of morbid conditions. Of course experimental investigation has gone further; has shown, for instance, how a mucous membrane over which air passes shares to a considerable extent in the lung functions themselves; but with this clinical observation has little interest. It has further been shown by StClair Thomson and others to what an extra-

ordinary degree the filtering functions of the nose are carried, facts which coincide entirely with Lister's observations as to the destructive action of mucous membranes on micro-organisms ; as well as with the clinical fact of the remarkable tolerance the nose exhibits of abuse on the part of septic instruments and atmospheres teeming with biological venom.

We are next inevitably compelled to pass in review many curious physiological phenomena observed as the consequence of, or at any rate in company with, certain forms of nasal disease. I refer, of course, to the so-called reflexes. These reflex phenomena are scarcely susceptible of physiological demonstration or verification, and hence the study of their physiology from a clinical standpoint becomes doubly interesting. So far as I am aware, Shurley, of Detroit, is the only investigator who has sought to establish in the laboratory the relation subsisting between nasal irritation and bronchial spasm ; and perhaps his failure to do so is sufficient to compel our asking the question whether the association of asthma with certain morbid conditions of the nasal mucosa can be justly attributed to reflex action? My own clinical experience steadily inclines me more surely to the conclusion that the asthma must either be regarded as due to direct attack of hyperæsthetic bronchial tubes by irritant particles gaining access to the lower respiratory passages as a consequence of nasal obstruction; or that both nose and bronchial tubes are equally concerned in an inflammatory process involving the whole of the respiratory tract. To put the point more concretely, my experience is that hypertrophied inferior turbinated bodies, spurs on the septum and adenoids induce asthma in those especially predisposed by exposing the bronchial tubes to direct irritation ; whereas the frequent association of nasal polypus with chronic bronchitis and asthma must be considered, judging from the frequent failure to remedy materially the bronchial symptoms by removal of the polypi, as due to an inflammatory condition common to nose and bronchial tubes. Probably somewhat similar arguments explain some other phenomena, such as laryngismus stridulus disappearing immediately on the removal of adenoids ; while more remote nervous phenomena, such as chorea, epilepsy, etc., can probably be accounted for by the often serious interference with easy respiration. Such considerations should convince us of the risks we run in seeking too zealously for physiological facts as the result of our clinical investigations. Physiological experiment may help us much in our clinical work ; but clinical observation will help us even more, I fancy, in our practical work if we do not allow it to misguide us into physiological conclusions.

IN OTOTOLOGY.

By W. MILLIGAN.

Mr. President and Gentlemen,—If we study the evolution of Otology from its earliest days we must all, I take it, be struck by the marked advances which have been made in this department of the healing art, especially during recent years.

Not so very long ago the practice of diseases of the ear and the

practice of charlatanism were almost synonymous terms, but thanks to the painstaking researches of many workers in various parts of the habitable globe, Otology now occupies an important and a prominent place as a branch of the great science and art of medicine.

The reason of this rapid advance is after all not very far to seek, and it is my duty to-day to try to show how our knowledge of diseases of the ear has been gradually evolved as the result of careful experimental research and carefully collated clinical experience.

No subject has, I think, derived more benefit from research work than has Otology, and the practical deductions which have been arrived at have proved, and are proving, of lasting benefit to the human race.

As a striking and withal a simple illustration of what I have just said, let me mention the effects of experimental research work upon the etiology and treatment of auditory furunculosis. Many years ago Löwenberg¹ showed that the exciting factor in the production of a furuncle was the presence of the staphylococcus pyogenes albus, that its penetration under the epidermal cells was a necessary part of this phenomenon, and that when once so located, it was able to set up such an amount of irritation as to lead to the production of a small focus of suppuration.

He further showed that furunculosis could be experimentally produced in animals by introducing staphylococci under the epidermal cells, and as a deduction he came to the conclusion that the affection was in reality of microbic origin, and that it was auto-infective. What has been the result so far as the treatment of to-day is concerned?

Do we not attack the disease by means of antiseptic agencies; do we not warn the patient of the possibility of one furuncle following in the train of another; and do we not at as early a date as possible lay bare the infected area so as to allow our remedies the chance of acting locally upon the nest of germs, if I may be allowed the expression?

The relation of germ life to diseases of the ear, especially to diseases of the middle ear, is a study of the utmost practical importance and of fascinating interest. Attempts have been made to found a classification of suppurative disease of the middle ear, according to the predominating organism or organisms present in the discharge; and although, perhaps, the time has not yet arrived when this can be done with any degree of accuracy, yet bacteriological researches have afforded much information which is of the greatest practical and clinical importance.

Although organisms are found in great numbers and in considerable varieties in cases of suppurative disease of the middle ear, it must also be noted that they are at times found in cases of exudation into the tympanum without any marked reactionary symptoms. That they are the actual exciting factor in the production of middle ear suppuration cannot at the present time be definitely admitted. Hence any bacteriological classification would be premature.

The cavity of the middle ear affords an almost perfect incubating chamber for germ life, shut off as it is from the access of light, kept at

¹ "Archiv. of Otology," Vol. XI., p. 273.

an almost uniform temperature, and in direct relation by way of the Eustachian tube with the cavity of the naso-pharynx, whose masses of lymphoid tissue afford an excellent nidus for the harbouring of germs derived from inspired air. No doubt it is possible for germs to reach the cavity of the middle ear by way of the circulatory system, but clinical facts and clinical experience go to show that the Eustachian tube and the external meatus are the more usual portals through which they enter.

The germs with which we have most to do in suppurative diseases of the middle ear are the staphylococcus albus et aureus, the streptococcus pyogenes, the pneumococcus of Fraenkel and the pneumobacillus of Friedlander.

Any or all of those germs may be present, and are capable of giving rise to the most varied and serious complications. In cases of acute otitis media pure cultures of the diplococcus pneumoniae are rarely to be obtained. In chronic cases one organism may succeed another, a suitable soil having been prepared for their development, and such a succession is believed by many to be the main cause of the chronicity of certain cases.

The organism, perhaps, to be specially dreaded is the streptococcus, for it has been proved by careful bacteriological investigation that it is of all the above-named germs the one most frequently met with in cases of septic thrombosis, intracranial abscesses, and septic affections of the pia-arachnoid.

Since the days of the discovery of those pathogenic organisms and their relation to the intracranial complications of middle ear disease, the study and the practice of aural surgery has received an impetus which some years ago was undreamt of. No longer can the scientific physician of to-day ignore the importance of middle ear suppuration. Its existence and its consequences place it upon a platform of importance which cannot now be denied it.

While germ life plays an all-important rôle in the production of acute suppurative attacks, clinical experience has long ago proved that the risks of secondary pathogenic infections are much more to be dreaded in cases which have passed from an acute into a chronic condition—a condition in which the muco-periosteum becomes eroded, the venous and lymphatic radicles become opened up, and a pathway thus afforded for the rapid dissemination to more deeply-seated structures of these deadly foes.

Lermoyez² regards the invasion of staphylococci from without as the invariable cause of chronic suppurative middle-ear disease. Whether this be so or not there is much to be said for Pes and Gradinego's³ aseptic method of treatment, which consists in sterilization of the auricle and meatus, the introduction of iodoform gauze into the auditory canal, and the application of a sterilized pad over the external ear, in other words an attempt to prevent the entrance into the middle ear of germ life from without. This method has the additional advantage of keeping the parts fairly dry. The abstraction of fluid is undoubtedly prejudicial to the activity of germ life.

² "Annal. des Malad. de l'Oreille," Jan., 1895.

³ "Zeitschrift für Ohrenheilk," Vol. XXXVIII., p. 65.

In a recent and valuable paper by Dr. R. H. Woods,⁴ a large number of elaborate clinical observations are brought together to show that the effused fluid in cases of acute middle-ear catarrh should not be regarded as purulent *ab initio*. So long as the membrane remains intact, so long are the bacteria restrained from active multiplication. The moment, however, that either the membrane ruptures or is punctured that moment contamination from without is courted, and an enormous impetus given to the rapid multiplication of the various pathogenic organisms existing in the middle ear. Now, sir, what does all this bacteriological and clinical work teach us? Does it not point to the conclusion that so far as is possible an attempt should be made by means of local depletion, mild and sedative applications and suitable hygienic surroundings to favour the absorption of the effused products of inflammation within the tympanic cavity before rupture of the membrane and consequent ærial contamination have taken place; also that if the membrane ruptures or has to be incised the strictest antiseptic precautions should be undertaken, and a vigorous attempt made to arrest the disease before secondary ulcerative changes have taken place in the mucosa and underlying bone, and before these pathogenic germs have a chance of disseminating their baneful influences? Where incision is necessary in cases of acute or subacute otitis media, I cannot too strongly urge the importance of free incision, for it is by securing efficient drainage that we are most likely to prevent extension to the mastoid cells—an ideal situation for an almost limitless manufactory of germ life—and to the interior of the cranium.

The importance of the streptococcus as an active agent in the production of these many and varied intracranial complications naturally makes us ask ourselves the question: Has research work by the discovery of an anti-streptococcic serum given us an agent of real practical value, capable of arresting or retarding the development of this deadly organism? At the outset we are met by the question: Is there one streptococcus, or are there several, which are pathogenic to man and the corollary? Will an anti-streptococcic serum protect against one streptococcus, or against all?

In 1892 Behring⁵ reported that time and patient research would doubtless procure a serum which would antagonise human streptococcal infections. Shortly afterwards Marmorek⁶ published a series of observations detailing the immunising effects of a serum he had prepared. Other observers, however, notably Petruschky,⁷ failed to obtain results which at all tallied with Marmorek's statements, while Aronson⁸ found the serum to be practically worthless. Schenk,⁹ however, by careful and laborious work, obtained a serum capable of protecting animals against the streptococcus used in the production of the serum.

The question still remains, however: Has this serum the property of

⁴ "Dublin Journ. of Med. Science," Jan., 1898.

⁵ "Centralblatt für Bakteriologie," &c., Jena, 1892.

⁶ "Wiener Medicinische Wochenschrift," 1895.

⁷ "Zeitschrift für Hygiene," Band XXII.; "Centralblatt für Bakteriologie," &c., 1896.

⁸ "Berliner Klinische Wochenschrift," 1896.

⁹ "Wiener Klinische Wochenschrift," 1897.

protecting against streptococci pathogenic to man? The weight of experimental evidence conclusively goes to show that the anti-streptococcic serum is incapable of doing so. To turn for a moment to the practical side of the question: What are the results when the serum has been used as a remedial agent? Does it or does it not arrest or modify acute streptococcal infections in man?

Cases have been recorded by numerous observers, Low,¹⁰ Pringle,¹¹ Raw,¹² where good results have been claimed from its employment. Other observers, however, report an exactly opposite state of affairs, having found the serum of practically no use whatever.

My own experience, gleaned certainly from a comparatively small number of cases where I have used it, is, that the serum exerts very slight, if any, influence upon the course of acute human streptococcal infections. It is true that an anti-streptococcic serum has been produced, but not a streptococcic antitoxin, for although the animals used in the production of the serum have been immunised against the streptococcus germ, they have not been immunised against the toxin produced by the streptococcus. I fully believe, however, that a time will come when the labours of the many painstaking scientists who are working at this subject will be crowned with success, and that they will put into the hands of the profession (1) the knowledge as to whether there is one, or whether there are many streptococci pathogenic to man, and (2) a serum, or a series of serums, which will possess an action antagonistic to the development of the one pathogenic streptococcus, or to the many, as the case may be.

Tubercular affections of the middle ear and its adnexa form an important and a not uncommon class of ear disease, and here, again, we have to thank the results of experimental work for much which is of use to us, both in the way of diagnosis and of treatment. Thanks to Koch's brilliant discovery we are now able to determine from the presence or absence of the tubercle bacillus whether a given case is or is not tubercular. Workers in this field will, I think, agree with me when I say that the detection of bacilli in discharge from the ear is a matter of great difficulty, and is frequently not possible. Nor is the difficulty much lessened when we come to make cover-glass preparations of small tufts of granulation tissue removed from the deeper areas of disease. But in properly conducted inoculation experiments we have a test which may, I think, be regarded as infallible. If a small portion of diseased bone from the advancing fringe of disease be taken and introduced with proper precautions under the subcutaneous tissues of a guinea pig's leg, and, if a few weeks' time be allowed, not only will the neighbouring glands be found to be the seat of tuberculosis, but bacilli can be found in sections taken from these glands.¹³ I regard this experimental proof as a matter of the first importance, because not only has the treatment to be somewhat different to that followed in a non-tubercular case, but

¹⁰ "Lancet," March 19th, 1898.

¹¹ "Brit. Med. Journal," Jan. 15th, 1898.

¹² "Lancet," July 9th, 1898.

¹³ "Brit. Med. Journ.," Nov. 16th, 1895.

the prognosis is naturally of much greater gravity. It is true that in the clinical history of such cases we have certain facts which lend colour to the idea that the case is of a tubercular nature, viz., the pale sodden appearance of the membrane, its perforation without the ordinary symptoms of pain, etc., the early occurrence of facial paralysis or pareisis and the early appearance of enlarged cervical glands. At the same time, I hold that for scientific accuracy we are called upon to demonstrate the actual tubercular nature of the affection just as much as the physician in a suspected case of pulmonary tuberculosis is called upon to demonstrate the presence of the bacillus in the expectoration.

I would desire to lay special stress upon this, because experience has taught me that cases of tubercular disease of the middle ear are by no means uncommon, and that in such cases we cannot be too guarded in our prognosis, nor too thorough in our methods of treatment. What is the exact etiology of these tubercular cases, and how does the bacillus find its way to this part of the body? Is it by aerial conduction by way of the Eustachian tube, or is it conveyed by vascular or lymphatic channels?

The importance of masses of naso-pharyngeal adenoid vegetations as an etiological factor in the production of middle ear disease is too well known to require any comment, but is it possible that these masses are more frequently tubercular than is at present generally supposed, and is it also possible that these tubercular vegetations may be the direct means of infecting the middle ear? Of late a considerable amount of time and labour has been spent in investigating the tubercular or non-tubercular nature of these adenoid masses. In 1894, Lermoyez¹⁴ published the history of two cases of adenoid hypertrophy, consisting almost entirely of tubercular tissue and tubercle bacilli. In 1895, Dieulafoy¹⁵ published the results of an investigation upon latent tuberculosis of the three tonsils. His method of research was to inoculate guinea-pigs with portions of adenoid tissue, and in a series of thirty-five cases he found that seven or 20 per cent. of the guinea-pigs became tubercular. In 1896, Brindel¹⁶ found out of sixty-four cases eight, or 12.5 per cent., showing microscopic evidence of latent tubercle. G. Gottstein¹⁷ found also in thirty-three pharyngeal tonsils four or 12 per cent. showing evidence of a tubercular origin.

Pflüder and Fischer¹⁸ examined thirty-two cases of adenoid hypertrophy, and found microscopic evidence of tubercle in five, or 15 per cent.

In a recent and very comprehensive paper upon naso-pharyngeal adenoids by you, Mr. President, and our esteemed Secretary, Dr. Logan Turner,¹⁹ you state, as the result of your experience, that 3 per cent. of the adenoid masses examined were tubercular, but say at the same time that this percentage and the other percentages which I have mentioned are probably all too low, and that with a more complete and more

¹⁴ "Annal. des Malad. de l'Oreille," etc., 1894, p. 979.

¹⁵ "Bull. Acad. de Méd.," April 30th, May 7th and 14th, 1895.

¹⁶ "Annal. des Malad. de l'Oreille," 1894.

¹⁷ "Berlin Klin. Wochenschr.," Heftes 31 and 32, August, 1896.

¹⁸ "Archiv. für Laryngol.," Bd. IV. Heft 3.

¹⁹ "Edin. Med. Journ.," April, May, June, 1897.

thorough examination the percentage might be found to be considerably higher. The tubercular nodules are, more or less, isolated; they may occur in outlying lobules, and they may not extend through the whole depth of the tissue, hence a very complete series of serial sections is required in each and every case before the existence of tubercle can be definitely excluded. In a series of experiments, which I have myself carried out—the inoculation of guinea-pigs with portions of adenoid masses—I have found 16.4 per cent. of the vegetations tuberculous. It appears to me, sir, that in the hypertrophied adenoid tissue of the nasopharynx, we have an excellent nidus for bacilli, and that very probably in the future research will show that many cases of tubercular middle ear disease owe their origin to tubercular disease of adenoid vegetations.

On the other hand, however, negative results have been obtained by other observers. Gourc²⁰ examined 201 cases microscopically, bacteriologically, and by inoculation, but could not find a single giant cell, or a single bacillus, while all his inoculation experiments proved negative.

Walsham²¹ also in a series of microscopic examinations of portions of adenoid vegetations removed from living subjects was unable to find any evidence of tuberculosis.

The preceding remarks will have shewn, to some extent at least, the interdependence between research work and our present knowledge of diseases of the middle ear. While much which is of the greatest practical and clinical value has been accomplished, much still remains to be done. How unsatisfactory our knowledge and our methods of treatment of certain forms of dry middle ear catarrh are is too well appreciated by all aural surgeons to require comment. Is it not possible, however, that careful research, experimental or otherwise, and the results of clinical experience may some day in the near future reveal what are the actual factors which underlie the production of this form of disease, both in its hypertrophic, its atrophic, and its so-called sclerotic varieties? Is sclerosis really an affection of the mucosa at all, or is it, as Politzer²² has affirmed, a primary affection of the bony capsule of the labyrinth?

Again, do we take sufficient cognizance of the frequent association of deaf-mutism with naso-pharyngeal adenoid vegetations? Its frequency surely suggests something more than a casual relationship. During an examination of a large number of deaf mutes, Frankenberger²³ found adenoids present in 59.49 per cent., Lemke²⁴ in 58 per cent., Wroblewski²⁵ in 27 per cent., and Aldrich in 73 per cent.

The great and important advances which have been made in the treatment of suppurative affections in and around the middle ear and its adnexa are due to two main causes. (1) The knowledge of the part played by micro-organisms in the production of these affections, and (2) the knowledge of the value of strict antisepsis in subsequent treatment.

²⁰ "Annal. des Malad. de l'Oreille," May, 1897.

²¹ "Lancet," June, 1898.

²² "Archiv. of Otolog.," Vol. XXIII., No. 4.

²³ "Monatschrift für Ohrenheilk.," 1896, No. 100.

²⁴ "D'e Taubstummkert in Grossherzogthum Mecklenburg Schwerin ihre Ursache und ihre Verhütung." Leipzig. 1892.

²⁵ "Pszeglast Lekarski," 1891, Nos. 23 and 24.

In the department of aural surgery, as, in fact, in every other department of surgery, both general and special, we have to acknowledge with an everlasting debt of gratitude our obligations to the brilliant research work carried on within these walls, Mr. President, by one of the most distinguished of the many distinguished alumni of this ancient and renowned university, the present Lord Lister. The principles which he laid down, the combined result of patient research and laborious clinical investigation, have revolutionised the science and art of surgery, and in our department have transformed the mastoid operation from a *noli me tangere* to an everyday proceeding, and have enabled us to follow up the paths along which septic organisms have travelled from foci of suppuration within and around the middle ear to the interior of the cranium with a degree of safety which a few years ago was undreamt of.

Our knowledge of diseases of the internal ear has been somewhat retarded from two causes: (1) the paucity of material for *post-mortem* examination, and (2) the great practical difficulty of examining such material even when it is in our possession. This dearth of pathological material has seriously interfered with an accurate appreciation of the clinical features of many affections of the internal ear. Yet at the same time experimental research has come to the rescue and has helped to fill in the gap.

The functions of the various portions of the internal ear—the semi-circular canals and the cochlea—have been largely determined from experimental work. Many years ago, Goltz,²⁶ Breuer,²⁷ and Mach²⁸ decided that the labyrinth contained a special anatomical apparatus, which by reflex action served to maintain the equilibrium of the body, during motion (the canals) the dynamic organs of sense, and during rest (the utricle and sacculus) the static organs of sense.

Flourens²⁹ in a series of experiments upon pigeons and rabbits, found, after division of the semicircular canals, such marked motor disturbances as to convince him that these canals were the central organs for co-ordinated movements. In 1875, Crum Brown advanced the kinetic theory, in which he assumes that the canals are paired organs, and that each pair has a function to perform in connection with rotation or movements of the head in particular directions. On the other hand, Böttcher and Baginsky³⁰ affirm that all motor disturbances which ensue as the result of injury to the semicircular canals proceed from a simultaneous injury to the cerebellum, and this view is supported by Steiner's³¹ experiments upon the dog-fish, where after removal of all semi-circular canals no motor disturbances were observed, and also by Politzer's³² observations in cases of ossification of the canals, when again no motor disturbances were noted.

²⁶ "Pflüger's Archiv.," III.

²⁷ "Pflüger's Archiv.," 1888.

²⁸ "Sitzungsbericht der K. K. Akademie der Wissenschaften," 1870.

²⁹ "Recherch Exper.," etc. 1842.

³⁰ "Archiv. für Physiologie," 1881.

³¹ "Deutsche Med. Woch.," 1889.

³² "Diseases of the Ear," 1894.

Ménière³³ was the first to adduce clinical proof that disturbances of equilibrium might be due to disease of the labyrinth, and we are all familiar with what has been designated Ménière's disease, in which sudden loss of hearing—partial or complete—is associated with vertigo, inco-ordinate movements, sickness and tinnitus, while clinical facts and *post-mortem* observations have taught us that affections of the utricle and sacculus are associated with static disturbances, affections of the ampullary system with dynamic disturbances.

Our ideas upon the functions of the cochlea are more or less hypothetical. Experimentally it has been shown by Corradi³⁴ that complete deafness follows destruction of the cochlea in dogs. Helmholtz's theory that only certain cords of the membrana basilaris vibrate for certain tones is supported by Baginsky's³⁵ experiments upon dogs. By destroying the lower coils of the cochlea he produced deafness for high tones, and deafness for low tones by destroying the upper coils.

Stepanow's³⁶ experiments upon animals are not in harmony with those just mentioned. After destruction of the upper portions of the cochlea he found no interference with audition; and again in a case of a patient who suffered from chronic suppurative otitis media with subsequent exfoliation of the upper turn and a half of the left cochlea, no defect in hearing for either high or low tones could be detected. These observations have been severely criticised by Moos and Steinbrügge.

Facts gleaned from numerous pathological observations support experimental research in assigning to the left superior temporo-sphenoidal convolution the important *rôle* of being the cortical centre for audition, whilst clinical observations point to the existence of a definite connection between the cortical centre of the one side and the auditory organ of the other. Ferrier,³⁷ whose experimental work upon the nervous system is so well known, found in two cases in which the temporal lobe was destroyed upon one side only impairment or total abolition of reaction to sound when the ear upon the same side was plugged, and in two cases where the destruction was bi-lateral no sign of hearing could be elicited, although the animals in all other respects were fully on the alert. As a converse to this he found that when every part of the temporo-sphenoidal lobe was destroyed, except the superior lobe, no sign of any impairment in hearing could be detected. Clinical evidence also supports these facts, derived as they have been from experimental research, as is shown by the well-known case recorded by Shaw,³⁸ where a female, aged thirty-four, after an apoplectic seizure, lost the power of speech and became deaf, and who about a year afterwards died of pneumonia. Upon *post-mortem* examination complete atrophy of the angular gyrus and superior temporo-sphenoidal convolutions of both sides was found. Similar cases have

³³ "Gaz. Med. de Paris," 1861.

³⁴ "Archiv. für Ohrenheilk." Bd. XXXII.

³⁵ "Sitzungsbericht d. Acad. d. Wissenschaften, Berlin, 1883.

³⁶ "Monats. für Ohrenheilk," 1888.

³⁷ "Cerebral Localization," 1890.

³⁸ "Archives of Medicine," Feb., 1882.

also been described by Wernicke and Friedlander,³⁹ Balzer,⁴⁰ Amidon,⁴¹ Alt,⁴² etc.

Disease of this convolution upon one side interferes with the functional activity of the opposite auditory nerve, but not permanently, as perfect compensation is possible apparently by means of the corresponding centre of the opposite side. From various observations, Gowers⁴³ infers that ordinarily only the opposite cortical centre is functionally in active operation, but that under certain exceptional circumstances the cortical centre of the same side takes on a compensatory action, and does double duty. If the disease, however, be left-sided, persistent inability to understand the meaning of words usually remains, although they are still heard as sounds. Numerous instances of this condition of sensory aphasia have been noted in cases of temporo-sphenoidal abscess secondary to suppurative otitis media, tumours, etc. Localization is also aided by the co-existence of agraphia, alexia and paraphasia.

On the other hand it is only fair to state that the cortical centre for audition has been referred to other areas in the brain. Thus, Ling in a case of bi-lateral suppurative otitis media, in which the auditory nerves were greatly atrophied, found a simultaneous and marked atrophy of the cuneus and the adjoining occipital convolutions of both sides, and of the precuneus of the right side, and locates the centre accordingly.

Strumpel also, on the strength of a *post-mortem*, places the centre in the parietal lobe.

The actual paths of communication between the cortical centres and the roots of the auditory nerves are imperfectly understood. According to Gowers the path is by way of the posterior part of the internal capsule and through the most superficial part of the tegmentum of the crus. That the fibres decussate in their course to the cerebrum has been established both by anatomical and by clinical research.

The many serious and dangerous intracranial complications which may ensue as the result of old-standing suppurative middle ear disease, necessitate an accurate knowledge on the part of the clinician of all that has been gleaned from experimental work upon cerebral localization. In this field many able scientists—Ferrier, Horsley, Goltz, Gowers, Hughlings Jackson, Bennett, and others—have been at work, and by mapping out topographically the functions of various portions of the cortex have put into our hands a key by means of which we can read the clinical course of a given case with a very fair degree of accuracy. In this connection I need only mention the occurrence of sensory aphasia as a symptom in cases in which a pathological lesion is situated in the superior temporo-sphenoidal convolution, of motor aphasia when the lesion is in the third left frontal convolution, or when pressure, say from an adjoining temporo-sphenoidal abscess, is exerted upon this centre (Kuhn's case⁴⁴) of twitching, paresis or paralysis of various muscles or

³⁹ "Fortschritte d. Med.," No. 6, 1883.

⁴⁰ "Gaz. Med. de Paris," 1884, IX., 1897

⁴¹ "New York Med. Journ.," Jan. 31st, 1885.

⁴² "Monats. für Ohrenheilk.," Jan., 1898.

⁴³ "Diseases of the Nervous System," 1893.

⁴⁴ "Archiv. of Otology," Jan., 1897.

groups of muscles, when the cortical centre which controls these muscles is interfered with, either as the result of an irritative and spreading meningitis, or as the result of the pressure of a gradually increasing focus of suppuration.

Unfortunately in cases of intracranial abscess, definite focal symptoms are frequently wanting, for the reason that those parts in which abscesses are usually found (temporo-sphenoidal lobe, cerebellar lobes, and frontal lobes) do not, as a rule, give rise to any definite focal symptoms for any form of lesion. Occasionally hemiplegia may be found if the abscess be very large, or if it encroaches upon the internal capsule. (Ballance,⁴⁵ Emmett Holt,⁴⁶ etc.) In 6 per cent. of the cases tabulated by Körner hemiplegia or hemiparesis existed. Implication of various cranial nerves has valuable diagnostic significance. Thus in temporo-sphenoidal abscess the third nerve is at times involved, in other cases the sixth, again in cerebellar abscesses optic neuritis followed by atrophy is at times observed.

Even if clinical evidence points to the probability of a localized intracranial collection of pus existing, it is frequently exceedingly difficult to say whether it exists in the cerebrum or the cerebellum.

The compilation, however, of the main symptoms of a large number of cases of intracranial lesions secondary to suppurative middle ear disease has enabled the clinician to associate with a given group of symptoms a definite lesion and sequence of pathological events.

Thus the clinical picture of an uncomplicated case of meningitis, of sinus thrombosis, or of intracranial abscess is fairly well understood. It is when one lesion is complicated or masked by another that we encounter our greatest difficulties in accurate diagnosis. For example, a meningitis may complicate a case of sinus thrombosis, a sinus thrombosis may complicate an intracranial abscess, and so on. From the prognostic point of view an accurate diagnosis is of the utmost importance, as will be readily appreciated. Should extensive meningitis co-exist with thrombosis, the chances of recovery, even were the sinus successfully opened and cleared out, would necessarily be diminished. In like manner, should meningitis co-exist with abscess, the most exact localizing of the purulent collection, and the most brilliant tapping and drainage, would almost certainly end in disappointment.

MacEwen⁴⁷ has pointed out that the symptoms of extra dural abscess or sigmoid sinus thrombosis always dominate and mask those of brain abscess when they occur together, and that it is not until the condition has been relieved that reliable evidence of the presence of an abscess can be obtained.

The question thus naturally arises—Have we any means at our command of diagnosing the exact nature of cases of mixed intracranial complications? Can we say of one case that it is complicated with meningitis, and of another that it is not? Some years ago Ziemssen and Quincke⁴⁸ urged the value of paracentesis of the spinal theca, not only as

⁴⁵ "Brit. Med. Journ.," May 22, 1897.

⁴⁶ "Archiv. of Pediatrics," March, 1898.

⁴⁷ "Pyogenic Infective Diseases of the Brain and Spinal Cord, 1893.

⁴⁸ "Neurologisches Centralblatt," May, 1893.

a therapeutic measure in cases of hydrocephalus, cerebral tumour, and spinal meningitis, but also as an aid to the differential diagnosis of certain intracranial lesions and of certain effusions, serous, purulent, tubercular, etc. •

Whatever may be said of the therapeutic value of the procedure there can be no question as to its diagnostic utility. Normal cerebro-spinal fluid is perfectly clear, colourless, faintly alkaline, of a specific gravity of 1010 or less, free from histological elements, containing either no albumen or only mere traces, but containing a substance, pyrocatechin, which although not a sugar, is capable of reducing Fehling's solution. Any departure from this normal standard may have very considerable diagnostic value. Thus in cases of cerebral abscess or tumour the quantity of albumen is slightly increased, in meningitis it is markedly so, so much so that more than one per cent. of albumen indicates the existence of meningitis. Pus, if found, will naturally indicate the presence of purulent meningitis, whilst the presence of tubercle bacilli would indicate the existence of tubercular meningitis.

Grunert⁴⁹ speaks very highly of the value of lumbar puncture in the diagnosis of the intracranial complications of middle ear disease, especially as regards the determination of the existence of a leptomeningitis in connection with purulent otitis media, whilst Körner⁵⁰ remarks that in cases of otitic brain abscess, in which a complicating leptomeningitis is suspected, absence of polynuclear leucocytes would indicate absence of any inflammatory condition of the leptomeninges.

Stadelmann,⁵¹ in seven cases of meningitis purulenta, found the escaping fluid to be cloudy, and to contain pus and many bacteria (meningococci, streptococci, pneumococci, etc.), whilst the amount of albumen in the fluid was always increased.

The observation is, however, of value only when the nature of the meningitis can be determined by ascertaining the microbe setting it up.

The actual value of lumbar puncture in the diagnosis of brain abscess is doubtful. In one case Stadelmann found the fluid to be under high pressure, in another the fluid was cloudy and purulent, and in a third it was at first purulent and then clear. So far also by means of lumbar puncture it is not possible to make a differential diagnosis between brain abscess and sinus thrombosis.

We have, then, at our command, in addition to various well-known clinical signs and symptoms, a means of diagnosing with a very fair degree of accuracy the all important question as to the existence or non-existence of an accompanying meningitis in these cases of mixed intracranial infections by an accurate chemical, microscopical and bacteriological examination of the spinal fluid, remembering always that positive results are alone of value.

In these somewhat discursive remarks, Mr. President, I have endeavoured to show how wrapped up our clinical knowledge is with facts gleaned from experimental research. That much has been done

⁴⁹ "Munchener. Med. Wochenschrift," Dec. 14, 1897.

⁵⁰ "Centralblatt für die Grenzgebiete der Med. and Chirurg.," Dec., 1897.

⁵¹ "Deutsche Med. Wochenschrift," No, 18, 1897.

in the past by means of experimental investigation to advance our knowledge of the etiology and treatment of diseases of the ear, will, I think, be granted by all students of the subject ; that much still remains to be worked out will probably be just as readily admitted.

Our knowledge of the central acoustic tract, although much advanced of late years by the methods of research associated with the names of Golgi, Weigart and Pal, by examination in the developmental stages as suggested by Bechterew and by Gùddén's method, is still far from perfect, as also is our knowledge of the central course of the vestibular nerve.

Although our methods of diagnosing the existence or otherwise of the presence of an intracranial abscess have advanced by leaps and bounds, we have yet to learn a means of exact differential diagnosis between a cerebral and a cerebellar abscess. The question as to the advisability or otherwise of ligation of the jugular vein in sinus-thrombosis is still a disputed point, and one worthy of serious consideration. Again, the exact *rôle* played by the ossicles in the transmission of sound has naturally an important bearing upon such operative measures as ossiculectomy in cases of suppurative and non-suppurative middle ear disease. While clinical experience will naturally materially assist in the elucidation of many of these problems the value of experimental research must not be lost sight of.

Knowledge which is built up upon accurate experimental, clinical, and pathological data is sure and lasting. The brilliant work which has been done in the department of aural surgery during the past few years should stimulate us all to greater achievements in the future, recognizing as we must that every fresh fact, and every accurate deduction, contributes in the long run to our knowledge of how to relieve the pangs of human suffering.

Dr. CECIL E. SHAW. *Case of Epithelioma of the Pharynx.*

Mrs. P. was sent to me by Dr. J. St. Clair Boyd, on May 19th, 1897, on account of difficulty in swallowing, and a feeling of a lump in the throat.

The patient was a fairly healthy-looking and well-nourished woman ; she did not know her exact age, but said it was about thirty-six or thirty-eight, and certainly she did not look more. Her family history was good, and presented no points of interest. She had been married four years, and had had two children, one of whom had died when teething of "congestion of the lungs." She had had no miscarriages. She was now more than six months pregnant.

About March 1st the throat began to feel sore, but as she had had sore throat in her previous pregnancies she thought little of it. At the end of April her voice had got hoarse, and she began to experience difficulty in swallowing. At no time was there any pain, merely an uncomfortable feeling of something in the throat. She had not lost flesh.

On examination the pharynx was seen to be dry and dirty, and with the laryngeal mirror a swelling, about the size of a nut, was seen in the posterior wall of the pharynx, directly behind the epiglottis, which it touched, and where it touched the top of the swelling was ulcerated. Thick strings of yellow muco-pus partly hid details. I could find no

enlarged glands, nor could I detect any swelling from the outside, though the patient said her throat felt larger than it used to do.

I ordered a spray of menthol in paroleine, and saw her again in five days, when the parts were cleaner and better seen. After brushing with cocaine solution, I nipped off a small piece of the edge of the ulcer with Schrotter's forceps, and examined it at the Pathological Laboratory at Queen's College.

At this time we had some suspicions of specific disease, and Dr. Boyd had put the patient on specific treatment, for she had lately had some disease of the bone in her hand, and ulcers on her legs. About a year ago her hair and eyebrows fell out, but no history of any rash or eruption in her or her children could be got.

A week later I saw the patient again, when she was confined to bed after several free hæmorrhages from the throat, the first of which came on five days after I had removed the piece of tissue for examination. Subsequently she saw another medical man, and had a severe attack of hæmorrhage while he was examining the growth. She then went to the country, and I did not see her again. I have been told that she gradually became weaker, though no new symptoms presented themselves. On July 2nd she was delivered of a child, which lived three days, and on July 9th she became comatose, and died in a few hours.

Malignant growths in the pharynx are rare, the least rare form being sarcoma of the tonsils, and I have not been able to find any record of a malignant tumour on the posterior wall. McBride (1) records a case of epithelioma of the posterior pillar of the fauces in a woman of sixty-three, and Hill (2) records a similar growth on the right glosso-epiglottic fold in a man of forty-four. In the latter case pain shooting up to the ear is mentioned as a prominent symptom. Tilly (3) has recorded a tumour of the posterior wall of the pharynx, just opposite the epiglottis, as in my case, but there was a clear syphilitic history, and the tumour disappeared in a fortnight under specific treatment.

In the case I have brought before you the absence of pain is an interesting point of which I can offer no explanation, and the patient was young for malignant disease.

Operative interference was from the first entirely out of the question owing to the size and position of the growth.

Mr. THOMAS BARR. *Notes on Extra-dural Suppuration in the Sigmoid Fossa due to Ear Disease.*

The following notes are based upon three cases which have come under my care, possessing some points of practical interest. These belong to that form of extra-dural suppuration in which a firm wall of bone intervenes between the middle ear cavities and the abscess cavity, presenting symptoms in many respects different, as we shall see afterwards, from another form, in which we find on penetrating a thin cortex of bone behind the external meatus cavity, occupied by pus, carionecrotic debris and granulation tissue, on the removal of which the sinus wall and the neighbouring dura mater already denuded of their bony covering. While I must not trouble you with too many details, it is

desirable that I should indicate the leading features of these cases, forming as they do the basis of my remarks.

The first patient was a young man (A.E., 1), nineteen years of age, who had had a purulent discharge from the left ear since early childhood, and as a result there was stenosis of the osseous external meatus and eburnation of the mastoid. Owing to the stenosis in the canal, and the development of severe pain over the corresponding side of the head, along with sickness and vomiting, the antrum of the mastoid was opened and curetted and the posterior wall of the external meatus was removed.

The painful symptoms continued in spite of the operation, and repeated rigors now ensued, each one accompanied by very high temperature and followed by marked remission. No intraocular changes were found, neither was there any swelling nor tenderness over the internal jugular vein, nor any metastatic phenomena. In view of the repeated rigors and other symptoms the sigmoid sinus and neighbouring dura mater were freely exposed by working back from the cavity of the antrum through sclerosed bone, and a considerable quantity of fœtid pus and abundant granulation tissue were found between the dura mater and the sclerosed bone, especially over the sigmoid sinus. These were thoroughly removed. The sigmoid sinus and a considerable area of the neighbouring dura mater was grey and covered with plastic exudation, but being soft and elastic the sinus was not opened. Although rigors recurred on three occasions within a week after the operation, the patient ultimately made a good recovery. A canal of considerable width opening behind the auricle and leading into the antral cavity remained behind perfectly dry and sweet.

The second patient was a healthy looking boy (c.c.), eight years of age, a deaf mute, who had suffered from purulent disease of both middle ears for five years. Total loss of hearing had ensued, gradually followed by loss of speech, until in a few months the power of speech had been entirely lost.

He had previously been able to hear perfectly and spoke well for his age.

About the beginning of this year he complained of pain in the right ear, and also on the top and side of his head, while the discharge from the ear became more profuse. During four nights previous to his admission to the Ear Hospital he had been unable to sleep owing to the severity of the pain.

There was likewise nausea, and he had vomited constantly for an entire day. He had also become emaciated and pale. *Neither tenderness nor swelling existed over the internal jugular vein on the affected side.*

On the morning after admission he had a severe rigor with a temperature of 103°. On the afternoon of that day I performed Stacke's operation. Much cario-necrotic *débris* and granulation tissue were found and removed by curetting. A few hours after the operation he had a second severe rigor, with a temperature of 105°, falling in a few hours to 97·8°. Within the next thirty-six hours he had other three severe rigors, each followed by very high temperature. The patient was again anæsthetized; and from the back part of the previous operation cavity

the bone was removed with bur and gouge until the sigmoid groove was opened, when fetid pus welled out. For a considerable distance above and behind the sinus the bone was still further removed, and a large quantity of granulation tissue was found between the bone and the dura mater. When this was removed by curetting, the dura mater, especially that forming the outer wall of the sinus, was found to be white and even necrotic looking. On the same evening the temperature fell to 97.6°, after which its oscillations were almost entirely within normal limits, and no further rigor occurred. After this the dura mater gradually granulated over, and now the cavity is reduced to a comparatively small one, representing the antrum and upper tympanic cavity. There is practically no secretion, and the boy is in perfect health.

The third case is especially interesting as belonging to the pre-operation period, coming under my care eighteen years ago. The condition found *post-mortem* showed a state of matters almost identical with the two previous cases, and a similarly happy result would, no doubt, have followed had the patient lived in more fortunate surgical times. He was a boy (d.d.), twelve years of age, whose left ear had discharged offensive matter for six years.

On Sunday, the 28th December, 1879, he was seized with great pain behind the ear over the mastoid region and in the back of the head. There was persistent vomiting for the first three or four days, with great heat of the skin, the face being flushed and pale by turns.

At the end of the first week severe rigors began, lasting about twenty minutes. They were followed by heat and then by sweating. The rigors continued three or four times a day, and he became at times unconscious, with stertorous breathing. After sinking into a completely unconscious state, with eyes open and fixed, and pupils dilated, he died three weeks from the onset of the illness. The late Dr. Foulis made the *post-mortem*. No meningitis nor cerebritis was detected, but a circumscribed collection of fetid pus was found in contact with the inner surface of the mastoid process and posterior surface of the petrous bone on the left side, just at the groove for the lateral sinus. The walls of the lateral sinus were thickened, and along with the neighbouring dura mater were separated from the bone by the collection of pus. There was no pus in the lateral sinus. The brain itself was healthy, with the exception of a slight discolouration of the surface immediately over the abscess. The antrum was dilated, but the bone between it and the sigmoid groove was intact and free from caries.

In regard to these cases I wish especially to direct your attention to the significance of *rigors and high temperature*. In simple extra-dural abscess rigors and high temperature are said to be comparatively rare, probably, according to Grunert, of Halle, in not more than one in five. This contrasts markedly with what is found in ordinary sigmoid sinus thrombosis, when rigors and high temperature are the predominant phenomena. Yet in these cases, notwithstanding the presence of marked rigors and high temperature, there was an absence of other well-known symptoms of sigmoid sinus thrombosis. There was neither pain, swelling, nor cording of the internal jugular vein; neither was there, on exposure

of the sinus, so far as inspection and palpation went, any evidence of plugging, nor, in the third case, was there any purulent formation in the sinus after death ; neither were there pulmonary nor other symptoms pointing to metastatic processes ; while finally, and very important, complete recovery in the first two cases has taken place without interfering with the sinus or internal jugular vein. In the third case the condition found was very favourable for operation, which makes one sorry that the boy did not live ten years afterwards. The death in this case seemed to be from prolonged brain pressure, as there was neither lepto-meningitis nor brain abscess. *One of the most important lessons to be obtained from the study of the two first cases is that rigors and high temperature may exist along with notable inflammatory changes in the outer wall of the sinus, and yet complete recovery take place without opening the sinus or ligaturing the internal jugular.* Apparently, by removing the purulent matter covering the sinus and dura mater, and thus averting further septic absorption from without, there is a fair chance that the infective elements already in the circulation may be got rid of by the phagacytic action of the leucocytes before other important organs become involved. This phagacytic action required some time to achieve its beneficent purpose, as shown by the three rigors, although in gradually diminishing severity, which occurred in Ewing's case after the second operation. This may be considered comparable to what takes place in certain cases of post parturient septic absorption, when the thorough clearing away of the infective matter from the inner surface of the uterus may almost immediately bring about the disappearance of high temperature and other alarming symptoms of septicæmia. We are therefore justified in the presence of shiverings and high temperature to delay the opening of the sinus and internal jugular until we first see the effect of simply removing the extra-dural collection and antiseptically treating the dura mater and outer wall of the sinus. We must not, however, delay the exposure of the sinus and dura mater when rigors and pyemic temperature exist in these chronic purulent cases ; we saw how delay eventuated in the third case. Delay may mean the formation of multiple metastatic abscesses, the production of deeper intra-dural changes, such as lepto-meningitis or brain abscess, or death from mere pressure, as in the third case.

In future I would not be disposed to wait long after opening the cavities of the middle ear before exposing the dura mater in the presence of symptoms such as were manifested by these two patients. In the light of these and other experiences I would be disposed in future, especially where there are rigors and high temperature, either to complete the exposure of the dura in one operation, or at least to perform the second part of the operation very soon after the first if no decided improvement meanwhile takes place. This no doubt means a long operation when we have to deal with sclerosed bone. I do not believe we can have such rigors and high temperature with an affection confined to the middle ear. What is the goal to be aimed at in these cases ? In such cases we should aim not only at removing the extra-dural collection of pus, but at the entire removal of the old septic disease from the middle ear. One

occasionally finds on examining an ear from the neighbourhood of which an intracranial collection of pus has been previously removed by a surgeon that fetid purulent matter still exists in the ear. This is most undesirable, as exposing the patient to future intracranial mischief. While in cases of acute ear disease the cure of the middle ear disease is effected without much difficulty, it must be confessed that in chronic purulent middle ear disease it is not unfrequently very difficult to bring about a perfectly dry non-purulent condition of the ear. The preliminary operation of thoroughly laying open the cavities of the middle ear will, of course, contribute materially to the cure of the purulent ear disease, but, notwithstanding, it may be necessary to effect further treatment at a subsequent stage in order to reach the desired result, and I would suggest that a specialist should in such cases carefully examine and report upon the interior of the ear before the patient is allowed to pass finally out of the surgeon's hands. A permanent non-purulent dry condition of the ear is in such cases a consummation devoutly to be wished.

Mr. THOMAS BARR. *A Case of Double Acute Mastoid Empyema, with Exposure of Dura Mater. Operation in both.*

The following case illustrates a form of extra-dural suppuration different from what I have just described, namely, where, on opening the mastoid behind the external meatus, the sigmoid sinus and neighbouring dura mater are found already exposed, covered with granulation tissue, and bathed in pus.

J. W. R., a male teacher, aged forty-six, consulted me on the 6th August, 1897. Patient was rather a delicate man, and had defective vision with Keratitis. He remarked that any scratch or wound received by him always had an unfavourable course, and was slow of healing. So far as he knew his ears and his hearing had been perfectly normal until three weeks previously, when he was seized with severe pain, first in the right ear and then in the left. After a few days both tympanic membranes were incised by the medical man in attendance. This was followed on both sides by profuse discharge. When he consulted me the chief features were—very profuse discharge from both ears and extreme deafness, necessitating loud speaking near to the ear. There was constant throbbing in both ears, but no severe pain. He complained, however, of occasional but not severe headache. There was no giddiness. He had been treated for a fortnight by the ordinary methods of antiseptic cleansing with inflation. His temperature was normal, and this continued so throughout, and he never had any rigors. The right ear seemed to be the worse of the two, and, while there was no pain spontaneously complained of, there was tenderness on pressure over the antrum and behind in the region of the masto-occipital suture. There was also swelling at the inner end of the roof of the external meatus, and the discharge, in spite of very frequent and thorough cleansing, continued very profuse; indeed, no sooner was an ear syringed and dried than pus began again to well out. It was considered desirable to operate first on the right mastoid. The antrum was opened in the usual situation, and there was found a somewhat remarkable condition of matters, consider-

ing the short duration of the disease. A large cavity was entered, full of pus, with granulation tissue and cario-necrotic *débris*, while the sigmoid sinus and neighbouring dura mater were found exposed on the back wall of the cavity. The pus, granulation tissue, and softened bone were thoroughly cleared away. Boracic acid and iodoform powder were freely applied, and the cavity was stuffed with gauze. After the operation there was practically no further discharge from the meatus. The hearing improved, the perforation soon closed, and the cavity behind granulated, and ultimately was allowed to close.

The left ear, however, still continued to discharge freely, although no pain was complained of unless on severe pressure over the antrum, when only slight pain was elicited. After waiting three weeks longer, the discharge continuing as bad as ever, it was decided to open the left mastoid antrum. This was done when a condition was found similar to that which had existed on the right side with the important exception that the sigmoid sinus was not exposed. The second operation was followed by similarly satisfactory results. Improvement of hearing, almost immediate, and entire cessation of discharge from the ear, with ultimately, although after a considerable time, healing and closure of the wound. Four months elapsed before complete cicatrization took place.

The points in this case which contrast with the other three cases are interesting and instructive.

1. The entire absence of rigors or high temperature with so much local inflammatory mischief. Evidently no systemic infection had taken place, notwithstanding the fact that the sinus had been bathed for some time in septic matter, whose effects, however, must have been limited to its outer wall.

2. In view of the extensive otitis and destruction of tissue, the comparative absence of pain, unless on pressure, was a somewhat remarkable feature.

3. Instead of sclerosis of the bone, so notable a feature in most of the chronic cases, we had extensive softening and bony destruction in both mastoids rapidly brought about.

4. The almost immediate subsidence of the copious purulent discharge from the ear after the operation is remarkable, as compared with the slow and difficult drying up of the discharge in the other two cases. No doubt this is common in acute empyemas of the mastoid.

5. In view of the early double paracentesis of the tympanic membrane followed by the severe course of the disease, we might recall the opinion of Politzer and others that when the tympanic membrane is incised for acute inflammation of the middle ear, the course of the disease, in certain constitutions, is apt to be more severe and persistent than when the membrane is let alone.

Mr. HUGH EDW. JONES. *Some Unmanageable Complications of Suppurative Middle-Ear Disease.*

The term "unmanageable" is used here in its relative sense only, and is not intended to deny that a successful result might have been obtained in some of the cases recorded in certain contingencies.

The publication of successful operations to the exclusion of fatal cases, while so encouraging to the special surgeon, blunts the perception of the general body of the profession to the extreme gravity of suppuration in the middle ear. Though no new facts are needed to prove the existence of danger in this affection, the danger cannot be too often insisted upon, nor the means of avoiding and combating it discussed.

These are the reasons which have led me to bring together the notes of seven fatal cases :—

Case 1. A girl, Mary C., aged six years, had otorrhœa for nine months. Fourteen days before admission, had vomiting, rigors, stiffness and swelling of neck and over mastoid. Was admitted into hospital on the day on which she was first seen, and the mastoid antrum and tympanum were thoroughly cleared out. On the third day the lateral sinus was exposed and septic clot removed, and at the same operation the internal jugular vein was tied. Marked improvement, lasting four days, followed, then the symptoms recurred, and the patient died on the seventh day.

Post-mortem.—We found patches of ulceration in the opposite lateral sinus.

This patient would probably have been saved if she had been seen and operated on a week earlier. (The case was reported at the Newcastle meeting.)

Case 2. (June 19th, 1897.) Boy, Jos. T., aged seven years. Otorrhea followed scarlatina a few months and post-auricular abscess formed seven weeks before admission. This abscess had been incised one and a half inches behind the auricle, and a small discharging sinus existed at that point. When admitted our then Senior House Surgeon, Dr. Milroy, at once opened up the abscess freely. Alarming hæmorrhage occurred from the mastoid vein, which could only be stopped by plugging the foramen. The patient had the characteristic oscillating temperature of septic thrombosis, but rigors and vomiting were conspicuous by their absence until the last three days, when vomiting was frequent. Third day in hospital, mastoid and lateral sinus opened up, the latter full of suppurating broken down clot. The bleeding from the sinus and from a bunch of veins over the mastoid was so great that the wound had to be plugged up before the sinus could be thoroughly cleared out.

Fifth day a second attempt was made to clear out the sinus. This time I tried to control the hæmorrhage by trephining over the sinus near the torcular, and pushing in the wall with gauze pledgets. Patient died on tenth day (June 29th, 1897).

Post-mortem.—Both lateral sinuses were full of suppurating broken down clot, through which the fluid blood permeated. About one inch from the torcular on the side away from the original lesion the dura was in a sloughing condition, and in contact with this was one end of a large abscess which extended through the occipital lobe to the anterior end of the temporo-sphenoidal lobe.

It is possible that if this case had been seen five or six weeks earlier, the sinus mischief would not have occurred. When seen the clot had broken down, and allowed blood to pass through it.

Case 3. (June 14th, 1895.) Robert G., aged seventeen years. Otorrhœa off and on twelve months. Patient was confined to bed at home for two weeks with symptoms of "inflammation of the brain." A slight improvement allowed his medical man, Dr. Parker of Ince, to send him to the hospital to have his ear examined (June 12th, 1895). The symptoms present were slow pulse (64), low temperature (97·6), retracted abdomen, severe pain in ear and forehead, and giddiness without staggering. Right external meatus was full of granulations; no external sign of mastoid disease.

First operation (day of admission), antrum and tympanum laid open. The cavities were full of offensive cheesy material; inner wall rough, tegmen carious and easily broken away, posterior wall and floor smooth and apparently healthy.

During next three days there was no marked change. No localizing symptoms appeared. Intellect clear and quick. Exploration of temporo-sphenoidal lobe through roof of antrum gave a negative result.

On the sixth day in hospital the following symptoms appeared: temperature rose to 102°, pulse 120, left ptosis, conjugate deviation of eyes to one side, nystagmus. While lying on right side on right arm the patient swings his left arm over, constantly striking the bedside and locker with his closed fist; if anything, the grip of the right hand is stronger than the left, but both are good; the pain in the head and shouting has increased day by day.

Third operation (sixth day). The dura was first exposed through the posterior wall of the cavity in the mastoid, and a probe passed between dura and bone in the direction of the internal meatus, but no pus was found there. A disc of bone was then removed from the occipital bone, just behind the posterior border of the mastoid, and on a level with its lower half. A fair-sized hydrocele trocar was used for exploring, and this was introduced four times without pus being found.

Death occurred next day.

Post-mortem.—We found that an abscess, which had embraced the middle peduncle of the cerebellum, had burst on its median aspect, bathing the pons in pus. The inner wall of the cavity towards the pons was not more than one-sixteenth of an inch in thickness. The parts involved were the flocculus, the amygdala, and parts of the quadrate and biventral lobes. The outer half of the affected area was still in a semi-solid condition. Into this solid portion we could follow the track of the trocar.

We were unable to demonstrate any direct connection of the abscess with mastoid or internal ear.

There was no evidence of any other intracranial mischief.

It is not an easy matter in this case to determine the date of the formation of the abscess. Dr. Parker recognized the illness as a cerebral one a fortnight before he was able to transfer the patient to the hospital. On the other hand, the localizing symptoms of cerebellar abscess did not appear until the day before his death. The abscess seems to have started near the median surface, and to have extended backwards and outwards. Did the abscess burst spontaneously, or did the thin inner

will give way when the trocar entered the semi-solid outer part of the abscess? With regard to the way of getting at the abscess, I feel sure now that the anterior part of the cerebellum can be best reached through petro-mastoid bone, and not through the occipital. The opening in the former proved to be at least an inch nearer the abscess than the trephine hole in the latter.

Case 4. (Oct., Nov., 1895.) Will. S., aged twenty-three years, had discharge from ears many years ago, but none lately until second week of present illness. He was ill in bed at home three weeks, and in the hospital one week before he came under the writer's care, on November 5th. A large superficial mastoid abscess (right) and some of the outer cells of the mastoid had been opened.

Symptoms.—Double optic neuritis, pupils dilated, vision good, no squint, marked "slowness of cerebration," occasional delirium, severe pain. Pulse rate had gradually risen from 70 to 90 and 100, and temperature from 97° to 100°.

Operation.—After opening the antrum and removing the carious tegmen, the dura over it was found to be sloughing, and a probe passed readily through it into a large abscess in the temporo-sphenoidal lobe. The opening was enlarged, and the cavity gently washed out with boric acid solution. The probe could be passed directly upwards two and a half inches without meeting any resistance.

The patient died ten days after the brain abscess was opened.

Post-mortem.—The abscess cavity was found to be without definite lining, and the brain around it was much softened. The slight relief given by the operation and the comparatively high pulse and temperature had led us to fear that we had to deal with some associated meningitis, or a rapid extension of the inflammation.

The delay of three or four weeks between the onset and opening of the abscess was undoubtedly one cause of failure.

Case 5. Rebecca H., aged twenty-two years. Influenza three months before admission, followed by acute suppurative otitis of left ear; three weeks before admission there was pain and swelling behind the left ear, and a fortnight later a rigor and vomiting.

On Admission.—(May 12th, 1893.) Hard brawny swelling in upper part of post-triangle of neck. Temperature, 100.2°; pulse, 120; pupils dilated; no optic neuritis; membrana tympana hidden by swelling of posterior wall of meatus. Diagnosis: Bezold's disease.

Operation, day of admission; mastoid opened; sinus traced from cells into posterior fossa of skull; extra-dural abscess evacuated; large subperiosteal abscess in posterior triangle of neck opened. These abscesses communicated in some way not discovered at that period. Lotion passed from one to the other.

Case did well from May 13th to 30th, and patient began to get up, then, suddenly, severe facial neuralgia was followed by general symptoms of suppurative meningitis. Trephining and opening the dura in middle and posterior fossæ failed to give relief.

Post-mortem.—(June 3rd, 1893.) Purulent meningitis over parietal and frontal lobes and into sylvian fissure and front part of base. T. S.

lobes free. T-shaped gutter formed by caries in posterior wall of petrous bone, one end of the cross-piece communicated with the mastoid cells, the other with the internal ear by way of the vestibular vein. The vertical portion passed down through the petro-occipital fissure beneath the sigmoid sinus into the periosteal abscess on the under surface of the occipital bone. From this a sinus burrowed amongst the deep cervical muscles to the front of the spine. Whole of left parietal lobe of brain breaking down.

Case 6. (June 16th, 1897.) James R., aged fifty-four years. Pain and deafness, left ear, five weeks, purulent discharge, ten days. Staggering and was giddy eight days ago, rambling in speech four days.

Admission June 16th. Mastoid opened, drachm of pus escaped. Whole mastoid found to be excavated. Symptoms of acute suppurative meningitis. Trephining failed to give relief, and patient died June 23rd.

Post-mortem.—Purulent meningitis of base.

Case 7. (August 22nd, 1897.) Joseph K., aged forty years. Ten days before admission, shivering and tightness in chest. Three days later pain in and behind left ear, which got worse, and continued three days.

On admission, August 21st, pain in left temple, winced when pressure applied over mastoid and below its apex. Pulse 78, respiration 44, temperature 98.4°.

August 22nd. Mastoid opened; full of granulations and small quantities of pus. Considerable relief, August 24th, pulse 63, temperature 97.8°. Optic neuritis. Cerebration perfect. Dura explored, no extra-dural abscess found. August 25th, more dull in intellect, walked without staggering. August 27th, will not speak, but understands what is said. Cerebellum explored; large quantities of pus flowed from beneath dura (meningeal).

August 28th, paralysis of right arm and leg. 30th, died.

Post-mortem.—Purulent meningitis; no brain abscess.

Conclusions.—Causes of failure:—

1. None of these cases had received treatment by a specialist for the ear affection.

2. In most of the cases serious delays occurred before surgical treatment was sought. The first thrombosis case had an unopened mastoid abscess for two weeks before admission. The second had an abscess seven weeks before admission. The temporo-sphenoidal case had been seriously ill for four weeks before he was seen by the writer. The caries of petrous case had swelling over mastoid and in neck three weeks before it was sent for operation. The suppurative meningitis cases were sent in as soon as the complication manifested itself, but evidence of very serious ear mischief had been present for some weeks, and I am bound to say that I think the mastoid complication could have been detected by a specialist.

3. *Extension of the Suppuration beyond the Limit of Successful Operative Treatment.* Whether this was due to the rapidity of the process or to avoid avoidable delays in applying proper treatment, it was the cause of failure in the thrombosis cases, in the temporo-sphenoidal case, and in the cases of purulent meningitis.

4. *Failure to Expose the Fatal Lesion.* This caused death in the cerebellar case, either by actually bursting the abscess without providing an exit for the pus, or by spontaneous bursting of the abscess after the operation. I venture to affirm that the only way in which the abscess could have been successfully opened was by operating along the posterior wall of the petrous bone. The occurrence of meningitis in the caries of petrous case would possibly have been prevented by a more extensive and thorough exposure of the diseased area. Once a general suppurative meningitis has been set up all operations fail.

The moral seems to me to be that the most important study of all in connection with this subject is the early detection of suppuration in the attic and antrum or internal ear, whether in chronic or *acute* suppurative otitis, and *more especially in the latter*, in which the mischief spreads with much greater rapidity.

Mr. T. MARK HOVELL. *Catheterization of the Eustachian Tubes.*

The Eustachian catheter is not a modern instrument, and there are many cases of ear disease which cannot be treated without it, nevertheless there is not a nomenclature by which any particular instrument can be described in such a manner that its precise dimensions can be known. At the present time Eustachian catheters are described by numbers, such as 1, 2, 3, etc., which indicate a gauge, and in some cases also a length of curve, but even these numbers do not represent any particular standard, for the several surgical instrument makers keep different patterns, and even each set of instruments that bears the name of an aural surgeon differs both in gauge and curve from another set that bears the name of another aural surgeon, and yet all the sets are numbered 1, 2, 3, etc. But not only is there an absence of uniformity with regard to gauge and length of curve as represented by a particular number, but the length of the stem varies also very considerably. An instrument eleven and a half centimètres in length measured by a straight line drawn from its larger extremity along the stem to a transverse line at a right angle with it, which touches the furthest point of the curve of the smaller end, is very convenient to use, for when in position, the anterior portion of this stem does not project more than an inch and an eighth beyond the floor of the nostril, and consequently the nozzle of the air-bag can be easily and firmly held in contact with the catheter by the thumb and forefinger of the left hand whilst air is being injected from the air-bag. For the introduction of this short pattern of catheter the profession is indebted to the late Mr. G. F. Hodgson, of Brighton. Catheters of a foreign pattern more than sixteen centimètres in length are still to be seen in some instrument makers' shops, but when an instrument of this description is in position it projects so far from the nostril that it is impossible, whilst the hand is steadied as it should be on the patient's face, to reach its end with the thumb and forefinger of the left hand, in order to hold the nozzle of the air-bag in contact with it.

As the dimensions of the inferior meatus vary according to the size of the superior maxillary bones, the presence or absence of spurs, deviations of the septum, etc., it is necessary for aural treatment to be provided with catheters which differ respectively in the gauge of their stem and

in the length of their curve. At the present time, as I have before mentioned, there is not a nomenclature which enables one practitioner to tell another the precise gauge and curve of a catheter required for the treatment of a particular case, and in order to overcome this serious inconvenience, I propose as follows :—

1. That the gauge of Eustachian catheters shall be that of the French catheter gauge, which is well known, and graduated on a definite scale.

2. That the length of curve shall be expressed in millimètres, the number indicating the distance which the curve separates two parallel straight lines. Thus when a catheter is placed so that the outer part of the stem touches the one line, and the tip of its beak the other line, the distance between the lines shall indicate the curve in millimètres.

As the beak of a catheter is usually slightly larger than the stem, the actual gauge of the latter will be a trifle less than the number specified.

The passage of an Eustachian catheter should be almost, if not entirely, painless, and when otherwise the cause is usually the employment of an instrument of too large a gauge, or too long a curve. An Eustachian catheter, No. 9, French catheter gauge, with a curve of eighteen millimètres between parallel lines, is suitable for most adult male cases, but it is sometimes found that this curve is too long to allow the catheter to be turned outwards in the naso-pharynx. When this occurs a curve of sixteen millimètres can usually be passed readily into position. I consider that No. 9 gauge is the largest which need be used. I employ usually either nine or seven gauge with a curve of eighteen or sixteen millimètres. In exceptional cases a curve of fourteen or twenty millimètres is required. Rarely the meatus is so small that a No. 5 gauge is necessary.

A general practitioner, who does not wish to carry a large number of Eustachian catheters, can do good work with the following three :—

No. 9 gauge	...	...	...	18 millimètres curve.
No. 7 gauge	...	...	...	16 millimètres curve.
No. 7 gauge	...	...	...	14 millimètres curve.

As may be inferred, I have found two millimètres sufficient to constitute a size as regards length of curve, and an alternate gauge convenient for the dimensions of the stem. By such a nomenclature as above suggested a standard can be formed which is intelligible to all, and it will enable one practitioner to accurately describe to another practitioner the size of the catheter suitable for the patient under treatment.

Dr. HOLBROOK CURTIS (New York). *The Treatment of Singers' Laryngitis.*

Dr. Curtis said that it was necessary to differentiate between the laryngitis generally found in singers and the ordinary laryngitis due to taking cold, or a coryza or pharyngitis descending in course. He called singers' laryngitis any simple inflammatory condition of the larynx and cords which prevented a singer from temporarily using the voice. These conditions were liable to arise from either constitutional or dynamic causes. Attrition was the most frequent cause of singers' laryngitis. Hæmorrhagic infarction affecting generally one cord, from vomiting,

coughing, or spasm of the glottis, was another condition to which the same treatment could be applied, and required passing notice. A bad method of attack, especially the *coup de glotte*, or stroke of the glottis, was the initial cause of the soda-water-bottle cords, which condition if neglected went on to a thickening of the membrane, and finally to the formation of nodules. Not only would the employment of tone exercises remove the nodules when present without mechanical or surgical aid, but the practice of these exercises was essential in the beginning of a singer's career to prevent the possibility of attrition. Dr. Curtis showed by diagram on the board the manner of vibration of the vocal cords, which was of a mixed character, having a segmentation in length following the laws of the vibration of strings, and in breadth vibrating like a rod or plate fixed at one end. This had been demonstrated by the laryngo-straboscope, which also showed the opposite bellies of the vibrating segments in contact during bad attacks. From the fact that the trouble which singers experienced was due in great measure to mechanical interference, Dr. Curtis had studied the formation of tones which would not permit the cords to touch during the attack in such a manner that attrition became possible. He showed the methods so fully explained in his book, "Voice Building and Tone Placing" (New York: D. Appleton), and explained the technique. These exercises by bringing into use the resonance, the nasal and buccal cavities in the proper manner, added a different set of overtones, and consequently the cords accepted a new arrangement of segmentation, and the opposite segments would theoretically be in a new position. Carried on as daily exercises the cords would become relieved of the inflammation due to attrition, and of congestions due to bad methods. Several cases were cited in illustration of the efficacy of the method. The only drug which Dr. Curtis spoke of as using as an adjunct to treatment was the extract of the suprarenal capsule—*ischænim*.

Dr. EUGENE S. YONGE. *The Treatment of Dysphagia in Laryngeal Tuberculosis.*

The author, in the first place, refers to the principal causes of dysphagia in laryngeal phthisis. He divides the treatment of this symptom into two parts—that by drugs and that by other methods. The relief of dysphagia by drugs hinges largely on the selection of the most suitable local anæsthetic, and a substance to lay claim to this distinction should be strongly anæsthetic, prolonged in action, devoid of marked toxicity, not specially disagreeable to taste, and not costly. The author has carefully tested a series of fifteen local anæsthetics, on the one hand to determine their relative power of relieving pain—five per cent. solution of cocaine being taken as the standard—and on the other hand to ascertain their suitability for the assuagement of the symptom under discussion. He concludes that there is no ideal drug of this class which is applicable to every case, but the following appeared suitable under various circumstances and generally effective:—Cocaine, antipyrin, eucaïne, orthoform, carbolic acid, guaiacol, ice, morphia (with or without iodoform), and paramonochlorphenel. Holocaine, aneson, aconite, and tropacocaine did

not prove satisfactory, either from feeble action, toxicity, expensiveness or combinations of these disqualifications. Cocaine-cataphoresis, or the deep diffusion of the drug, by means of the galvanic current, is still *sub judice* as regards its application to laryngeal dysphagia.

In the presence of ulceration any of the above-mentioned remedies may be applied, but when loss of tissue is absent only cocaine, antipyrin, eucaïne, carbolic acid, and ice are available. With perichondritis antipyrin has certain advantages, in that it lasts longer than cocaine, and the quantity required to produce analgesia has never, to the author's knowledge, given rise to toxic symptoms. A mixture of cocaine and antipyrin, or cocaine and carbolic acid, may be recommended when the former drug has to be used for considerable periods, the total effect of the cocaine being strengthened without a corresponding increase of that substance. Iced solutions of cocaine (five per cent.) appeared to be at least double the strength of solutions at the ordinary temperature. Morphia and iodoform gave modified relief, in extensive ulceration, for several hours. Orthoform, when applied to a (cleansed) laryngeal ulcer, produced, in the great majority of cases, complete relief, beginning in a few minutes and lasting several hours. No toxic symptoms have been observed. The drug appears to possess decided advantages over cocaine in ulcerations of the upper air-passages owing to its anæsthetic power and prolonged action not being coupled with a perceptible degree of toxicity—an advantage of some moment in regions where a drug becomes quickly absorbed. Guaiacol (with or without menthol) has well-known sedative and antiseptic properties in mild degrees of ulceration. Eucaïne (A) is weaker and less toxic than cocaine, but, in the author's opinion, its principle indication appears to be when there is an idiosyncrasy debarring the employment of cocaine. Solutions of paramonochlorphenol in glycerine produce decided anæsthesia after a preliminary period of rather severe smarting; it has also a curative action, in which it resembles submucous injections of guaiacol. The latter is contraindicated when there is any considerable amount of œdema.

Of methods other than drugs, there may be considered the prone position, recommended by Wolfenden, to be adopted in taking nourishment; the imbibition of semi-solids; the œsophageal tube; rectal feeding; and lastly, surgical measures. The author prefers rectal feeding, in exceptionally severe dysphagia, to the œsophageal tube, owing to the distress and disturbance to the parts caused by its passage. He has had no experience of curettement, arytenoidetomy, or epiglottectomy, for the relief of painful deglutition, because he has not yet encountered a case of dysphagia, uncontrollable by other measures, in advanced phthisis, in which the state of the lungs and the general condition of the patient was such as to permit the consideration that surgical interference would be successful, or even justifiable.

MR. MACLEOD YEARSLEY. *The Thyroid Treatment of Middle Ear Disease.*

After some preliminary remarks upon the sources of error in all clinical investigations of drugs, and the necessity for a large series of

carefully investigated cases before any conclusions could be drawn, the author reviewed briefly the work that had been published by Brühl, Vulpus, Eitelburg, and Mapurgo. He then gave the results which he had arrived at by the careful treatment, after the manner of Brühl, of twenty-one cases. Of these four were males, seventeen were females. The ages varied from nineteen to sixty-two, the duration of disease from one to twenty-four years. There were fifteen cases of sclerosis, three of middle ear catarrh with ossicular ankylosis, and three of ossicular ankylosis following suppurative disease. Nearly all the cases had already been treated in other ways. In no single case did any benefit result from the thyroid, although several cases benefitted by being treated by other methods. Details were given of several cases, special attention being paid to ossicular ankylosis, since Brühl had suggested that the thyroid gland preparations influence adhesions in the middle ear by the iodine in them, iodine being a "superior resorbent for pathological connective tissue." Two of the cases of ossicular ankylosis from old suppurative otitis media were improved after by ossiculectomy. One case of myxœdema, the subject of chronic middle ear catarrh, who had been taking thyroid for two years, was getting worse until treated by ordinary methods.

In conclusion, Mr. Yearsley stated that he had carried out the treatment with a perfectly unbiassed mind. He thought that in all such investigations of drug action the negative results ought to be published equally with those which were positive. In no single case had any good results been due to the administration of thyroid, and his opinion was distinctly adverse to the treatment.

SECTION OF SURGERY.

MR. EDMUND OWEN. *The Operative Treatment of Cleft Palate.*

The observations arranged themselves under three headings:—

1. Before the operation.
2. The operation.
3. After the operation.

1. *Before the Operation.*—The operation not being one of immediate urgency, the surgeon can make preparations for it which will add greatly to the prospects of success.

Thus, if the child is liable to diarrhœa, cough, or vomiting, attention must be directed towards obtaining the general improvement in that respect.

If the tongue is coated, a change of air and of diet should be ordered, and the child put upon a course of rhubarb and soda mixture. Every carious tooth should be extracted, or cleaned and filled, and, to diminish to the utmost the risk of local infection from pathogenic micro-organisms, the mouth and gums should be daily washed with boracic lotion.

With regard to the important matter of the presence of pharyngeal adenoids and of enlarged tonsils, it has recently been advised that the operation upon the palate should be done first, but I do not regard such advice as sound.

The child has hitherto been in the habit of breathing through a wide palatine cleft, and if this is suddenly closed by operation, provision should first have been made for securing a passage for the air as free as possible. It is better that the surgeon should amputate enlarged tonsils at least ten days before dealing with the palate, and if on doing so he cuts across a septic or tuberculous focus, as often happens, he had better wait a little longer still before dealing with the palate.

Just before the operation upon the cleft palate the nurse gives a beef tea enema with a little brandy.

2. *The Operation.*—Some specimens of modified Smith's gags were shown; the modification consisting in substituting for the roughened plates which took their bearings from the teeth, bars studded with two short spikes, which fitted into the crevices between the teeth, or embedded themselves harmlessly in the gum. This modification spared the surgeon the annoyance caused by the slipping of the gag. The gags are made by Messrs. Weiss, of Oxford Street, in three different sizes.

The child being brought up to the end of the table, its head is allowed to hang back, so that the blood may have but slight chance of finding its way into the larynx. Mr. Owen was satisfied that this is the best position for the operation, and he spoke having had ample experience of the old plan of letting the head lie flat or having it slightly raised.

The anæsthetic used is chloroform, but it was never advisable that the child should be too deeply under its influence. It surely must be an anxious time for the anæsthetist when the operator keeps on insisting that the child is not sufficiently comatose. It was far better that the child should now and then show signs of "coming round" than that it should be over-narcotised.

When the anæsthetic is given, a strong suture is passed through the tip of the tongue, to pull it out from beneath the plate of the gag.

As soon as the edges of the cleft have been denuded, an incision is made along the inner side of the alveolar process, and as this is apt to be followed by a good deal of bleeding, it was well to pause here for a few moments and make firm pressure with a sponge, so as to keep the bleeding under control. Then the raspator is introduced, and the muco-periosteal flaps are raised. But, as a rule, they cannot be sutured until the alveolar incisions have been prolonged into the soft palate. These incisions traverse the attachments of the levator and tensor palati, as well as of the palato-pharyngeus. The attachment of the aponeurosis of the velum to the hard palate is divided with curved scissors. For the sutures silver wire is used, and they are inserted by a modification of Smith's needle.

A point of great practical importance is to have the lateral incisions made very freely, and when the cleft is closed they, together, may seem to be as wide as was the original cleft.

3. *After the Operation.*—Probably the child will vomit when he is "coming round," and if he does this just before he is moved from the table so much the better. The act of vomiting does not interfere with the line of suturing, though, of course, if vomiting persists it may be prejudicial.

As regards feeding, the best thing is home-made beef jelly ; milk is more likely to cause difficulty in swallowing, or to set up vomiting. Home-made beef jelly slips down easily ; it is of high nutritive value, and it is easily absorbed. Meat extracts and essences should be avoided.

As soon as possible after the operation the child should be daily taken out of the house, for fresh air is an excellent tonic.

Whether a boracic mouth spray is used or not, a case every now and then goes wrong after operation. The child looks ill, his temperature goes up a degree or two, his tongue is coated, his breath is foul, the line of the palatine suture becomes swollen and unhealthy, and a thick, stringy, muco-purulent discharge collects about the roof of the mouth. These appearances indicate that staphylococci have taken possession of the damaged tissues, and that, undergoing luxuriant cultivation, they are spoiling or completely wrecking the surgeon's handiwork. He, poor man, is helpless in the matter. If he is emotional he may sit down and cry.

Mr. Owen had at that time a case of this sort in the Children's Hospital. It was in a girl with a complete cleft of the soft and hard palate. Mr. Templeton took a cultivation from it on the seventh day, and found the gelatine completely liquified in less than thirty-six hours by vigorous staphylococci.

A fortnight after the original operation, when the edges of the cleft had begun to look clean, the child was again put under chloroform, and the marginal granulations having been freshened up, the edges of the flaps were brought together once more, and secured by wire sutures inserted wide of the cleft. The case has done extremely well after this supplemental operation, and it seems to promise as good a result as if the edges had adhered by primary union. This was the chief point in Mr. Owen's paper, and he regarded it as one of great practical importance. There is probably no factor so prejudicial to prompt union after staphylorrhaphy as septic infection, but after a child has undergone this infection, one would probably be right in concluding that he could not undergo a second attack ; that he has acquired by it a complete immunity. It was strongly advised, therefore, that after complete or partial failure in staphylorrhaphy a further attempt should be made to close the cleft by adjusting the granulating edges of the flaps.

MR. LENTHAL CHEATLE. *Specimen of Sarcoma of Middle Ear; Small Spindle Cells.*

In the number of the "British Medical Journal" published on October 16th, 1897, Dr. Barr and Mr. James H. Nicoll reported a case of "malignant tumour of the brain originating in the middle ear." This case, in its history and *post-mortem* appearances, bears a striking resemblance to the following ; in fact, Dr. Barr's account of the character of the tumour's growth will apply equally well to my case.

Female child, aged two and a half years, was admitted into West London Hospital, upon May 4th, 1896. A large, diffuse, fluctuating, red, hot, and painful swelling occupied a position behind the pinna on the left side ; an elliptical, tough, pedunculated polypus filled the external auditory meatus.

As there was a history of a discharge from the ears for some months past the whole condition appeared to be the result of an infective inflammation, beginning in the middle ear and spreading from there to surrounding parts. Upon opening the post-aural swelling by making the usual curved incision, this view of the case was not altered, for nothing was observed that could not have been caused by an infective inflammatory process, namely, pus, granulation tissue, and ulceration of bone—the last was represented by a communication about the size of a three-penny bit between the abscess cavity and the mastoid antrum. Upon inserting a sharp spoon into this sinus the polypus was forced out of the meatus as if it had been previously separated from its attachments. After enlarging the sinus leading to the antrum the resulting cavity was lightly packed with a strip of cyanide gauze soaked in a mixture of iodoform and 1-2000 solution of perchloride of mercury. I regret to say sections were not made of the polypus.

The local conditions were so much improved by this subsequent treatment that the child left the hospital for the seaside on July 16th.

Dr. Pardoe, who was my house surgeon, saw the case at the hospital again on August 17th, and admitted it as an undoubted sarcoma. When I saw the case the child had facial paralysis of the left side, and behind the auricle a sessile, red, offensive and fungating mass, about the size of a small orange, was pushing it outwards and forwards. The tumour passed subcutaneously downwards into the upper regions of the neck. Optic neuritis was present.

Further operative interference was impossible as the disease was obviously too extensive, so the parts were kept as pure as possible by careful dressing. The external and visible parts of the tumour grew rapidly, and the child died upon October 19th.

At the *post-mortem* examination that was made by myself with the kind permission of Dr. Aldren Turner, the tumour was nearly as big as the child's head, and involved the uppermost of the deep glands of the neck which pushed outwards the overlying structures, and, in parts, actually involving them in the malignant growth. Through an opening in the temporal bone, that involved the mastoid and lower squamous regions and the bony meatus roof of the middle ear, the growth appeared and occupied the middle fossa of the skull as a rounded, lobulated mass, about the size of three chestnuts pressed closely together. Over the intracranial surface of the growth the dura mater was lost, the overlying temporo-sphenoidal lobe was much indented, but did not form any part of the malignant growth.

The lateral sinus and other structures were normal. A microscopical section of the tumour proved it to be a sarcoma, chiefly consisting of small spindle cells.

The references to recorded cases will be found carefully noted at the end of the report of Dr. Barr and Mr. Nicoll, to which allusion has already been made.

The age of the patient precluded the possibility of attaining any data with regard to the hearing or tuning-fork.

SECTION OF DISEASES OF CHILDREN.

Dr. R. T. HEWLETT. *On Neisser's Diagnostic Stain for the Diphtheria Bacillus.*

A new differential staining method for the diphtheria bacillus was recently published by Neisser.¹ The formula is as follows :—

1. One gramme of methylene blue (Grubler's) is dissolved in twenty cubic centimètres of alcohol (ninety-six per cent.), and mixed with nine hundred and fifty cubic centimètres of distilled water and fifty cubic centimètres of glacial acetic acid.

2. Two grammes of Vesuvium are dissolved in one thousand cubic centimètres of boiling distilled water, and the solution is filtered. Cover-glass specimens prepared from fresh serum cultures are stained in No. 1 for one to three seconds, rinsed in water; counterstained in No. 2 for three to five seconds, washed in water, dried, and mounted in Canada balsam. So treated the diphtheria bacillus appears as a slender, longish rod, stained brown, and generally containing granules of a deep blue or inky tint. There are usually two granules situated at the poles; occasionally a third at the middle of the rod.

The method has been tested on about fifty cultures from diphtheritic throats, and the characteristic appearances have been obtained in every case.

A slightly longer treatment than that recommended by Neisser has seemed to yield better results—viz., five seconds in the blue, and ten seconds in the brown. An attempt has been made to extend the method to swabbings or membrane from the throat. With swabbings the results were not very successful, an error of about fourteen per cent. occurring in thirty cases. With fresh membrane, and care being taken to avoid fallacies from the presence of fragments of leptothrix and diplococci, which may simulate the diphtheria bacillus, Neisser's method often affords a rapid means of positive diagnosis. If a negative result be obtained recourse must be had to culture methods.

LARYNGOLOGICAL SOCIETY OF LONDON.

Ordinary Meeting, June 8th, 1898.

HENRY T. BUTLIN, Esq., F.R.C.S., *President, in the Chair.*

Dr. PERMEWEN. *Œsophageal Tumour Removed by Subhyoid Pharyngotomy.*

The author showed a tumour removed from the œsophagus by the above operation. The tumour was of a benign character, and was very easily shelled out and removed. The patient, however, died on the tenth day from septic pneumonia, three days after the removal of the

¹ "Zeitschr. f. Hyg.," XXIV., 1897, p. 448.

tracheotomy tube. Dr. Permewan raised the question of the liability of a fatal issue in these cases, and suggested that they should be treated on the principles advocated by Mr. Butlin in thyrotomy, viz., that the wound should be left open. He compared the wound made in this operation with that in an ordinary cut throat, in which septic symptoms very rarely developed, and believed that the favourable course of the latter case was due to the fact that they usually healed by granulation.

Mr. SYMONDS said that with regard to the fatality of these operations, which was well known, he attributed the result to infection of the connective-tissue planes. He had successfully removed the epiglottis by this operation. He advised that after suture of the mucous membrane the wound should be packed for two days with iodoform gauze, as the best means of excluding this danger.

Mr. LAKE. *Case of Tubercular Ulcer of the Nasal Septum.*

Patient, a man aged twenty-eight, suffers with pulmonary tuberculosis of about four years' duration, and has had several attacks of hæmoptysis. The nose began to bleed about twelve months ago from the right side.

The ulcer on the septum was scraped and treated with lactic acid on May 24th, since when the acid has been applied eleven times, and insufflations of iodoform employed constantly.

Dr. STCLAIR THOMSON thought it was open to question if the ulcer in this case was not a simple traumatic ulcer, produced by the patient picking his nose. It had not the thickened, indolent margin of the tuberculous ulcer, and the hæmorrhagic and slightly inflamed base was more suggestive of traumatism.

Mr. LAKE. *Case of Tuberculoma on the Right Vocal Cord.*

This was a small tumour on the right vocal process, which had been present about two weeks. It has been treated with lactic acid applications, and is now very much smaller than when he first saw the case.

Dr. BOND asked if members had ever noticed the marked super-vention of general tubercular symptoms after removing small tubercular growths.

Mr. LAKE stated that the subject had been investigated by Clark, who concluded that such a complication was not usual—an experience which was corroborated by Dr. WATSON WILLIAMS, who thought these cases generally improved after operation.

Mr. LAKE. *Cured Case of Laryngeal Tuberculosis.*

The patient, a man aged thirty-five, was under treatment the early part of 1897, and was discharged cured on May 8th, 1897. When first seen he had redness and congestion of both cords, an ulcer on each towards the anterior extremity, and an irregular ulcer on the anterior part of the cricoid cartilage. The treatment consisted of daily intra-tracheal injections of a solution of naphthalene, three per cent., oil of cinnamon, one-half per cent., in parolene.

Mr. SYMONDS. *Epithelioma of the Epiglottis.*

The author showed a man, aged sixty-five, with epithelioma of the base of the epiglottis, also involving the tongue. The man came to the

out-patient department at Guy's Hospital for the lump in his neck. The case was beyond operation on many grounds, and was exhibited to illustrate the large glandular infection in these cases; the patient has only recently complained of dysphagia, and noticed the glandular swelling two months before the dysphagia began.

Dr. BOND drew attention to the comparative frequency with which patients sought relief for glands in the neck secondary to malignant disease in the larynx before complaining of inconvenience due to the primary growth.

Mr. WAGGETT pointed out the value of "orthoform" in relieving the pain in advanced ulceration of the larynx due to malignant disease.

Dr. HERBERT TILLEY had had similar experiences in the application of this remedy to relieve the dysphagia of tubercular ulceration of the pharynx and larynx. In a very advanced case in which he had recently used it, where the patient was literally starving to death, the insufflation of ten grains of orthoform enabled him to eat solid food with comfort, and the effect of one insufflation lasted nearly twenty-four hours. He had not met with any toxic effects, and compared with the drawbacks of morphia and the temporary anaesthesia of cocaine he thought the remedy was of very great value.

Dr. MACGEAGH had found it very valuable in relieving the pain of an ulcer of the leg, and Mr. LAKE pointed out that in order to obtain its good effect a breach of surface was necessary.

Dr. DUNDAS GRANT. *Case of Removal of Small Fibroma of Vocal Cord with Extremely Pendulous Epiglottis.*

The patient, a young man, had been hoarse for about fifteen months, the epiglottis was extremely pendulous, and the cords could only be seen with great difficulty. A small growth could be detected at the junction of the anterior and middle third of the right vocal cord, and Dr. Dundas Grant's endo-laryngeal forceps were introduced *à l'aveugle*. On the first occasion a small piece of the mucous membrane of the ventricular band was cut off, leaving a superficial sore which speedily healed. On the next occasion the growth was alone removed in its entirety. The exhibitor thought it would have been almost impossible to remove the growth with an unguarded instrument.

Dr. HERBERT TILLEY gave details of an identical case at present under his treatment. The patient was a clergyman with a soft fibroma on the anterior third of the left vocal cord. It was impossible to get any view of the larynx without cocainizing the posterior surface of the epiglottis, and then holding it forwards whilst the other hand held the laryngoscope. The patient himself could only exhibit the arytaenoids when phonating an *e*. The speaker had successfully removed nearly all the growth by means of Grant's forceps, and like that operator had been obliged to introduce them "in the dark," so to say. He raised the question as to whether in these particular cases, where one has to adopt such a method and it fails to remove the growth, one is justified in advising external operation, *e.g.*, splitting of the thyroid. He was aware there was the difficulty of getting accurate apposition of the cords after the operation,

but thought it not an insurmountable one. A tracheotomy would scarcely be necessary. He asked if members had had any experience of the operation; he himself had none. In cases of tubercular ulceration of larynx in suitable early cases he thought the operation was advisable, and should perform it when opportunity offered itself, but, of course, these cases were on a different footing from those of simple growth.

Dr. BOND cited two cases of tubercular laryngitis in which he had performed laryngo-fissure, one of which was successful.

Dr. STCLAIR THOMSON observed that the last remarks were in reference to laryngeal conditions which could not be reached *per vias naturales*. With regard to simple tumours of the larynx, he believed that in the last four years, at least, no case had presented itself in the clinic of any member of the staff of the Throat Hospital, Golden Square, which had not been successfully dealt with through the mouth. As to the question of laryngo-fissure for such cases, he quoted the publications of Prof. Massei, of Naples, who had had an extensive experience, and had recently published the statistics of his five hundred cases of laryngeal neoplasms. Dr. Massei protested strongly against external operation for simple growths, as being never quite free from danger, and often productive of damage to the voice.

Mr. SYMONDS said he would hesitate to advise the external operation where he had failed to secure a growth by forceps without asking the assistance of some colleague whose dexterity might be greater than his own. In two cases recently he was happy to see the patients relieved in this way. We were not all equally gifted with the manual dexterity requisite for such operations. With regard to the accuracy with which the cords can be adapted after thyrotomy, he would point out that perfect adaptation of the divided edges of the thyroid cartilage does not necessarily include complete restoration of the position of the cords. He pointed out that even in the most careful hands it was not always possible to make the section exactly between the cords, and he had seen a cord divided in very experienced hands. Therefore he would strongly oppose external operation in simple growths until the most skilled help at disposal had failed. He had known a case recently of complete recovery after external operation had been proposed by another operator who had failed to remove intralaryngeally. In tubercle he had operated in two cases, only to make the patient much worse. In the early stages, where inaccessible to forceps, it might be advisable.

Mr. WAGGETT thought that in discussing this question consideration should also be taken of the formation of granulations on the posterior aspect of the wound. Such formations might cause as much functional disturbance and give as much trouble in their treatment as the original growth.

Dr. PERMEWAN could not see the justifiability of thyrotomy in these cases of innocent growths. Loss of voice was the only inconvenience, and owing to the difficulty of exactly hitting the middle line in splitting the thyroid, and to the formation of granulations and cicatrices in healing, the voice was very unlikely to be improved by the operation. But in tubercular disease he thought thyrotomy had a future before it, and he

personally would not hesitate to do the operation in a suitable case. But, as a matter of fact, so much could be done by intralaryngeal surgery that there was seldom any necessity or indication to do more.

Dr. DUNDAS GRANT, in replying, contended for patience in the use of endolaryngeal instruments in cases of non-malignant disease, and protested against the too ready performance of thyrotomy for the relief of conditions which impaired the voice without threatening life. In malignant disease, on the other hand, the justifiability and necessity for early thyrotomy were unquestionable.

Dr. JOBSON HORNE. *Microscopic Preparations of a Growth within the Ventricle of a Larynx. Its Nature considered with reference to the condition of "Hernia" or "Prolapse" of the Ventricle.*

The author showed the right half of a larynx cut into a series of microscopic sections to demonstrate the topography and nature of a tongue-like growth dependent from the roof of the ventricle.

Dr. Horne considered that the specimen perhaps threw light upon the histology of some of those tumours variously described as prolapsus, procidentia, or hernia ventriculi, or fibroma ventriculi; and if seen during life it would probably have been described under one or other of these terms.

The growth was more fully developed in the middle third of the ventricle, and a microphotograph of a section in this region that was shown is reproduced. Under the microscope the tongue-like excrescence was seen to be very similar in structure to the adjacent ventricular band. It was covered from root to tip with a columnar epithelium, which at points of pressure had been worn away, but had undergone no metaplasia. Immediately subjacent to these points of detrition there was some small-cell proliferation, and this, in the absence of any specific irritant, Dr. Horne was inclined to attribute to traumatism, occasioned by compression of the growth within the sacculus. The growth, taken as a whole, suggested a duplication of the ventricular band.

In reply, Dr. HORNE regretted he was unable to say what clinical symptoms, if any, the condition described had given rise to during life. For the larynx he was indebted to Prof. Kanthack. Sections were cut on account of some plication of the epithelium about the vocal processes, and the growth was then met with. Such a growth he thought might readily become the site of tubercular disease in a predisposed subject. From the ventricles of larynges removed from persons that had died of pulmonary tuberculosis, but which presented no microscopic evidence of laryngeal tuberculosis, he had frequently been able to obtain tubercle bacilli; and in sections cut from such larynges he had found the disease commencing in the posterior and inferior parts of the ventricular band. Minor spurs and excrescences springing from the roof of the ventricle he had met with, but not with such a growth as the one here described.

Dr. WATSON WILLIAMS. *Laryngeal Forceps.*

The author showed a pair of laryngeal forceps which had been made from his design. By means of two finger openings in the lower handle,

greater steadiness in manipulation is obtainable than in many of the ordinary patterns in use.

Mr. LAWRENCE. *Papilloma of Uvula.*

The author showed a case of papilloma springing from the juncture of the uvula and soft palate on the left side, in a boy aged fifteen. There was no history of its duration. It caused no symptoms, and was noticed in treating the patient for other throat trouble.

Dr. PEGLER. *Case of Dislocation of the Triangular Cartilage of the Septum.*

H. J., aged twenty-seven, received a blow on the nose from a cricket ball last September. The impact occurred from below. The patient entered a provincial hospital, and after the swelling had subsided some operation was deemed advisable, as the scar of an incision is now visible on the dorsum, just below the nasal prominence. This disfigurement, together with that resulting from the sunken cartilage, induced the patient to seek further advice. A secondary source of trouble is obstruction to breathing through the nose. On introducing the index fingers into the nasal cavities a sensation as of splitting of the triangular cartilage is felt above at the osseo-cartilaginous juncture, the two lateral halves seeming to separate again when the pressure is taken off. The nasal obstruction is caused by a prominent acuminate cartilaginous spur in the left fossa, and a smaller basal spur in the right one.

Dr. STCLAIR THOMSON was not sure that the cartilages seen in each nostril were the displaced lateral cartilages. He was of opinion that what was seen was the broken and dislocated triangular cartilage, for on placing a finger in each nostril it was easily felt that there was no cartilage in the ordinary position, the anterior part of the nostrils being only separated by a septum of mucous membrane. With regard to treatment, he advised avoidance of interference in such cases for merely cosmetic reasons. In numbers of these affections of the nose the cause of the collapse of the bridge was not simply the absence of the support of the septum, but the retraction of scar tissue. Surgical interference in this case would possibly only lead to more cicatrization, and therefore a more saddle-backed nose. He had recently operated on a case where he had been successful in restoring a perfectly upright septum, but the external disfigurement remained. In the present case he suggested that the patient might always wear at night, and possibly by day, the hollow vulcanite splint used in Asch's operation. It would prevent further collapse.

Dr. DUNDAS GRANT had been unable to follow Roe's description of his operations for relief of deformity in similar cases. He thought improvement could be effected by making a median incision and removing the more prominent portion of the nasal bones. In reply to Dr. StClair Thomson, Dr. Dundas Grant pointed out that it was in syphilitic disease that cicatricial contraction was especially accountable for deformity, but that in a traumatic case like the present the same principle was not so applicable.

Dr. PERMEWAN could not see any great need for any surgical interference in this case, and would limit himself to cutting off the projecting pieces of cartilage without regard to their exact anatomical position. Like Dr. Grant, he had found it rather difficult to follow Dr. Roe's methods of subcutaneous operation, though he had been much struck by his excellent results, as shown at Montreal last year.

Dr. PEGLER said he gathered that the consensus of opinion was in favour of letting the case alone. He would, however, restore the obstructed breathing way, think over the suggestions that had been made for curing the deformity, and report the result if any operation were undertaken.

Dr. SNELL. *Case of Tubercular Laryngitis.*

Patient is a married woman, twenty-one years of age. Hoarseness commenced about twelve months previously, shortly before confinement, and has continued to the present time, while some dysphagia and much irritable cough are now present. There is some tubercular taint on her mother's side. There are dry cavities at the apex of right lung. General health is fairly good.

In the interarytenoid region there is a papillomatous-looking mass, probably a tuberculoma, and this was at first almost the only lesion observable, but recently some thickening of the aryteno-epiglottidean folds has appeared, and they are of a dark red colour. There is also some swelling of the false cords. A shallow ulcer is present on the surface of the right cord.

The chief interest in the case is the initial interarytenoid swelling, without other pathological appearances usually characteristic of early tubercular laryngitis.

Dr. STCLAIR THOMSON pointed out that the anæmic condition of the larynx, the situation of the hypertrophy in the interarytenoid region, and especially the marked subglottic thickening, all pointed to the case being undoubtedly tubercular. He would not recommend active local treatment.

Mr. H. BETHAM ROBINSON. *Tumour of Right Vocal Cord—Case for Diagnosis.*

F. G., aged thirty-eight, complained of hoarseness in 1892, when a growth on the first vocal cord was diagnosed by his medical attendants. Not improving under treatment he applied to St. Thomas's Hospital early in 1893, where the presence of a growth was corroborated and it was painted with acid, which resulted in his getting quite well. He remained quite well till early in May, 1898, when the hoarseness returned, and on June 2nd he again became a patient at St. Thomas's under Mr. Robinson. Examination showed a small sessile swelling a little in front of the middle of the right cord. Its size is about that of a split pea, and it springs from the margin of the cord; it is white in colour, convex on the surface, and evidently is affected by compression on approximation of the cords. The tissues around its base are infiltrated, but the rest of the cord and larynx appear healthy. There is no pain or cough, but

there is a family history of tuberculosis, and the patient himself shows old cicatrices in the neck, but his chest is normal. There is no history of syphilis.

Dr. STCLAIR THOMSON thought the growth might be taken as a fibroma, but strongly suspicious of malignancy. In support of the latter was the situation of the growth in the middle of the cord (too far backward for speaker's nodule, and too far forward for pachydermia), its white appearance, and the way in which it seemed to infiltrate the cord, although the latter moved freely. Still, it would be easy to remove a good portion with the forceps, and obtain a satisfactory microscopic specimen.

Dr. JOBSON HORNE also considered that the position of the growth was not that typical of pachydermia verrucosa laryngis.

Mr. SYMONDS suggested that this might be a case of pachydermia because of the pyramidal shape, the white summit, and the way in which it was reduced by the pressure of the opposite cord in phonation. The short history of hoarseness, he thought, also supported this view. It was not typical, but resembled pachydermia more than any other formation. He would suggest that the case be watched without any active interference.

Dr. DUNDAS GRANT thought the site was unusual, being neither at the junction of the anterior and middle thirds nor at the vocal process. He recommended removal by means of a suitable instrument—for example, his own endolaryngeal forceps,—and the subsequent application of salicylic acid. The surface of the growth suggested that it was of a warty nature.

Dr. BOND. *Difficulty of Swallowing in an Infant.*

Patient, a female infant of ten months, has always had a great difficulty in swallowing fluids. The child chokes on trying to swallow, makes an attempt many times, and finally swallows a little fluid, generally with a crowing inspiration. Occasionally some of the fluid gets into the nose. There is no history of diphtheria.

Dr. JOBSON HORNE. *Tuberculosis of Larynx and Fauces.*

The author showed a case of tuberculosis extensively involving the larynx, soft palate, and left tonsil, occurring in a young man aged twenty-one, who had sought relief for dysphagia and aphonia.

The patient dated the onset of the disease from an attack of hæmoptysis some eighteen months previously, whilst in his usual health, and free, as he thought, from any lung affection. Hoarseness quickly followed the hæmoptysis. When the man came under treatment some three months ago the epiglottis was considerably thickened and turban-shaped, and the free border along the right side was ulcerating. The dysphagia was intense. The laryngeal mucosa was universally infiltrated, and in places ulcerating. The disease had also attacked the soft palate about the base of the uvula and the palatine arches.

The apices of both upper lobes of the lungs were infiltrated. The epiglottis was curetted, and the larynx treated with lactic acid. The

dysphagia was considerably relieved, and the patient went to the seaside for a while, where he materially improved. He has now returned with the disease spreading about the left palate and left tonsil, which was excavated, and Dr. Horne was desirous of receiving suggestions as regards further treatment. Although no tubercle bacilli had been detected in the tissue removed from the epiglottis, it was undoubtedly of a tubercular nature.

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WE are enabled to state that this form of the well-known compound of the hypophosphites with strychnine and quinine is all that can be desired. We find that patients, more especially ladies with few opportunities for regular medicine taking, are willing and able to manage this form of medication. The drug loses none of its virtues in the process. We would recommend it to the attention of those gentlemen who see many professional speakers and singers, as one could so easily be taken a short time before using the voice.

SECOND SPANISH OTOLOGICAL, RHINOLOGICAL, AND LARYNGOLOGICAL CONGRESS.

THIS Congress will meet at Barcelona this month. Dr. JOSÉ A. MASY, Secretary. Fifty specialists have signified their intention to be present.

APPOINTMENTS.

C. HEATH, F.R.C.S., H. TILLEY, M.D. Lond., F.R.C.S., STC. THOMSON, M.D., M.R.C.P., F.R.C.S., F. POWELL, M.D. St. And., have been appointed members of the staff of Golden Square Hospital for Diseases of the Throat.

THE
JOURNAL OF LARYNGOLOGY,
RHINOLOGY, AND OTOTOLOGY.

Original Articles are accepted by the Editors of this Journal on the condition that they have not previously been published elsewhere.

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SOCIETIES' MEETINGS.

BRITISH MEDICAL ASSOCIATION.

Meeting, July 8th, 1898.

PAPERS AND ABSTRACTS.

Dr. DAVID NEWMAN. *Early Symptoms of Pressure upon the Vagus and Recurrent Laryngeal Nerves.*

In a lecture published eleven years ago,¹ I endeavoured to show by reference to cases of aortic and innominate aneurysms—(1) That aneurysm of the aorta and of the innominate artery may exist and give rise to laryngeal symptoms only, but that in most instances, on critical physical examination, certain collateral signs may be made out sufficient to warrant one in forming a positive diagnosis, or to give rise to a very strong suspicion of an intrathoracic tumour; (2) that in the early stage pressure may cause paroxysms of most urgent dyspnœa, accompanied by laryngeal stridor and paroxysmal cough; (3) that at a later stage paralysis occurs, usually, but not always, limited to one side, characterized by phonative waste of breath and imperfect cough, but without dyspnœa, except when reflex spasm is indicated on the opposite side, or when pressure-stenosis is caused by the aneurysm.

Since the lecture referred to was published, other cases have come under my observation in which the respiratory symptoms were the first warnings of serious disease, aneurysmal or malignant, within the thorax.

It is because of some particular disturbance of function that the patient seeks advice, and in the cases referred to not infrequently the

¹ "British Medical Journal," July 2nd, 1887.

respiratory organs suffered first, so that the condition was looked upon by the patient as a throat affection and nothing else ; the symptoms, however, proved to be the danger signals of serious disease within the chest, causing, by pressure upon the nerve trunks, impairment of the functions of the laryngeal muscles. I do not propose in this short communication to refer in detail to individual cases, but prefer to give the general results of what I have observed.

1. In some cases one of the earliest symptoms of interference with the innervation of the larynx, by the pressure of an aneurysm or of a mediastinal tumour within the thorax, is *sudden and paroxysmal dyspnœa accompanied by laryngeal stridor*. While the stridor is, as a rule, most marked during inspiration, expiration being free, still in rare instances the exit of air also may be impeded. That death occurs in cases of aortic aneurysm as the result of laryngeal suffocation has been attested by numerous published cases, and is not now subject to doubt.

It is more particularly to the value of paroxysmal dyspnœa, as an early symptom of pressure upon the laryngeal or vagus nerves, that I now desire to direct attention, and this must be estimated by a careful consideration of the precise laryngeal conditions present, as well as by the other concomitant symptoms of the disease. In cases, however, where stridor is the first and only symptom, not infrequently the dyspnœa is so severe that during an attack a detailed examination with the laryngoscope is impossible, and when the attack passes off the appearances may be found to differ very little from the normal. During the intervals the voice may be comparatively little altered, there may be a total abeyance of symptoms, and the laryngoscope may fail to reveal any abnormality, but this negative fact I have found to be of the highest value. If there is, in a patient past middle life, a total absence of any lesion of the mucous membrane, and no condition can be discovered which may physically impede the movements of the vocal cord, and if there is no evidence of any central nervous lesion or of pulmonary disease, the presumption is strongly in favour of aneurysm or mediastinal tumour. Cases are seldom seen at this very early stage. The laryngoscope generally shows that there is some interference with the action of the muscles of the larynx.

Certain points of interest may now be considered. How does pressure upon the recurrent laryngeal and vagus nerves appear to the clinical observer to affect the muscles of the larynx? Is the dyspnœa due to paralysis of the abductors or to spasm of the adductor muscles?

I cannot here enter upon a critical enquiry of the various views advanced as to the anatomical origin of the laryngeal fibres of the vagus. It has been clearly demonstrated by experiments, supported by clinical observation, that on each side of the brain, at the lower extremity of the ascending frontal convolution, there is a bilateral cortical centre which controls the adductor muscles of the vocal cords, and that stimulation of one of these centres produces adduction of both vocal cords, while destruction of one, as in aphasia, does not involve paralysis of the laryngeal muscles on the corresponding side. Just below and in front of the adductor centre, Risian Russell describes a bilateral abductor centre, and below

it an area stimulation of which results in a clonic abduction of the cords.

This subject has been very carefully discussed by so distinguished an expert as my friend Sir Felix Semon, who, along with Dr. Watson Williams, has contributed a most carefully considered article in Clifford Allbutt's "System of Medicine," Vol. IV., p. 841 *et seq.*, on "Laryngeal Neuroses."

After referring to the various experimental enquiries, the former author (Sir Felix Semon) calls attention to a law, namely, that in all progressive organic lesions of the centres or trunks of the motor laryngeal nerves, the abductors of the vocal cords succumb much earlier than the adductors, and immediately following he says, "although a large number of such cases of progressive organic disease acting upon the whole of the nerve trunk have been recorded, and publicly shown, in which the abductor muscles had undergone degeneration and atrophy, either alone or at any rate more advanced than in the adductors, not a single specimen has yet been demonstrated which, under similar conditions, exhibited the opposite order of events in the development of degenerative changes in the individual laryngeal muscles; all attacks made so far upon the law rest exclusively upon clinical observations, which are either incomplete, or are capable of an interpretation other than that adopted by their authors." At p. 851, he states that "paralysis of the abductors is almost invariably bilateral and due to functional disorders, probably cortical," while unilateral abductor paralysis is almost always the result of pressure upon the recurrent laryngeal nerve, and at p. 853 the following statement is found:—"In unilateral abductor paralysis the affected cord remains fixed in the median line, that is, in the position of phonation; and as the opposite cord is unaffected, respiration is not embarrassed unless the cause of the paralysis simultaneously produces direct compression of the lower air passages, as in not a few cases of aortic aneurysm. Under such circumstances, that is to say, in the initial stages of all the severe lesions mentioned as 'causes' which may implicate the laryngeal nerves—and indeed not rarely up to the patient's death—neither vocal nor respiratory symptoms need occur in adults: thus the laryngeal lesion, which may be of the greatest importance for the correct diagnosis of the whole case, will entirely escape notice unless it be a part of routine practice to examine all cases in which lesions of the laryngeal nerves could occur, whether there be symptoms pointing to the larynx or not."

The bearing of the above statement upon the question under consideration is most important, and while we must admit that in most cases of pressure upon the recurrent laryngeal nerve the vocal cord is in the position described, still the law is not absolute; otherwise, how are the paroxysms of sudden and paroxysmal dyspnoea to be explained? In complete bilateral abductor paralysis the vocal cords remain in or near the middle line, and the chink in the glottis presents much the same appearance as during phonation, so that during inspiration, especially when forced, a certain amount of stridor may be induced, but this form of paralysis is very rare, and when present is seldom complete. The

dyspnœa may be explained in two ways—either from sucking in of the flaccid cords, or from the accumulation of mucus in the air-tubes on account of efficient coughing being impossible. Whether abduction or adduction follows upon electrical stimulation of the recurrent laryngeal nerve seems to depend upon the relative power of the antagonistic muscles of the larynx, for we find that while in one animal stimulation of the recurrent laryngeal leads to approximation of the vocal cords, in another it produces exactly the opposite effect ; and stimulation acting on the efferent fibres generally causes unilateral adduction or abduction of the vocal cord. Pressure on one recurrent laryngeal nerve is not likely to lead to serious dyspnœa, while, on the other hand, pressure on the vagus, by inducing spasm of the adductor muscles on both sides, or of paralysis on one side and spasm on the other, frequently leads to serious and sometimes to fatal laryngeal obstruction. When due to paralysis, dyspnœa is seldom severe, although persistently present in a greater or lesser degree on account of the partial closure of the glottis, while expiration is usually unimpeded. The dyspnœa observed at the early stage of pressure on the vagus is very different from this, the attacks are paroxysmal, sudden, and transitory, as in laryngismus stridulus. In spasm of the adductors, the closure of the glottis being complete, but transitory, gives rise to paroxysms of violent dyspnœa, which come on and pass off with equal suddenness. In the intervals between the paroxysms the voice is unaltered, and auscultation over the larynx fails to detect any impediment to respiration. The amount of pressure to which the nerve is submitted seems to my mind to determine whether or not the patient suffers from dyspnœa. If the pressure be slight, the irritation of the excito-motor nerve calls into action the muscles of the larynx, and the constrictors being more powerful, closure of the glottis results ; whereas in a later stage the function of the nerve is impaired or destroyed, and consequently diminished power is observed in the movements of the muscles on the affected side, while reflected spasm may be induced on the opposite side. The reason why dyspnœa should occur in the later as well as in the earlier stages is explained by the experiments of Dr. John Reid. I cannot understand how a paralysis of the abductor muscles could possibly cause sudden and transitory paroxysmal attacks, leaving the voice unimpaired during the intervals, and the larynx normal in appearance, as in a case (Case I.) referred to in the "*British Medical Journal*," 2nd July, 1887.

In the lecture above referred to I made the following remarks :—
"Paroxysmal or constant dyspnœa, attended by other laryngeal symptoms, but without structural disease of the larynx, cardiac or pulmonary lesions, to account for the symptom, should always lead one to suspect the presence of aneurysm, involving either the innominate artery or the posterior and inferior aspect of the arch. When the spasm or paralysis of the vocal cord is limited to one side, the probability is that the recurrent laryngeal on that side is alone compressed, and in neither of these instances is dyspnœa a dangerous symptom, although, in the former, it may be a prominent one. If spasm be present, the pressure is probably

slight and of short duration ; if paralysis, the pressure is either great or prolonged. When the paralysis or spasm is bilateral one of two conditions may exist, (1) pressure upon both recurrent laryngeal nerves, or (2) pressure upon the trunk of one vagus."

Further experience has tended to confirm the opinion above expressed, and I find that these observations are in accord with those of one of our greatest clinical teachers, Prof. Sir William T. Gairdner, who has kindly allowed me to read a proof of an article on aneurysm of the aorta which will shortly appear in Clifford Allbutt's "System of Medicine." In the article referred to Sir William says, "the late Sir George Johnson believed that he had obtained evidence in support of the 'theory that a long-continued irritation of the trunk of one vagus may, through its efferent fibres, so disturb the common centre of the two vagi as to cause either bilateral spasm or bilateral palsy of the laryngeal muscles.' As regards bilateral spasm, this position is quite unassailable, and in accordance with experimental evidence ; but as regards palsy on the opposite side from the irritation it is different. 'Broadbent's law,' which is referred to by Sir G. Johnson as corroborating this theory, has, in fact, precisely the opposite effect. Broadbent's law is concerned with explaining (and it has very perfectly explained) the *exemption* from paralysis of muscles which normally act always together on the two sides when there is a centric unilateral lesion which otherwise might be expected to give rise to paralysis. To make this law cover the case supposed of a paralysis reflected from the seat of a peripheral unilateral lesion, so as to give rise to bilateral paralysis, is altogether at variance with the principles involved, and probably not supported by any precise experimental evidence."

2. The characteristic features of the *cough* in cases of pressure upon the nerve fibres supplying the larynx are in many instances easily recognized, and in some are so distinctive as to lead the trained observer at once to suspect the nature of the malady causing it. The cough is hoarse and imperfect ; these are its two chief features, but in addition it may have other qualities, to which I shall presently refer. The cough is essentially a paralytic phenomenon. In place of the glottis being completely closed after the full inspiratory act, a chink is left so that the air within the trachea is not compressed sufficiently to produce the proper popgun cough explosion ; this is explained by an observation easily made in the healthy larynx. When a person coughs, or rather prepares to cough, the laryngoscope shows that not only are the vocal cords approximated, but the margins of the ventricles of Morgagni are brought firmly together, and assist in forming a firm barrier to the exit of air until they are burst asunder by the forced upward draught from the trachea. The true cords form a valve, with the cusps facing upwards, while those of the false cords face downwards, and so when closed more efficiently oppose the upward passage of air. The true cords, if the abductors are paralysed, may form a valve against the entrance of air to the trachea. In cases of paralysis of the abductor muscles of the larynx, not only do the true cords fail to act, but in coughing the false

cords are not approximated as just described. Hence the imperfect cough which is so distinctive of thoracic tumour, or of aneurysm pressing upon the recurrent laryngeal nerve.

Prof. Gairdner has long taught the importance of imperfect cough as a symptom of aneurysm ("Clinical Medicine," 1862). He was familiar with it long previous to the general employment of the laryngoscope, and he was able, by the careful use of the finger, to distinguish when the symptom was due to a primary laryngeal lesion, and when it was the result of paralysis of the laryngeal muscles. It is to his early observations, and to those of Dr. Wylie ("Edinburgh Medical Journal," September, 1866, and "Edinburgh Hospital Reports," Vol. I., p. 67), that we are indebted for the important position occupied by this symptom in the diagnosis of aortic aneurysm. Referring to cough and the associated group of laryngeal and tracheal symptoms, Sir Wm. T. Gairdner writes, in a lecture published in the "International Clinics," third series, 1895, Vol. IV., p. 45, "I have again and again made the diagnosis of aneurysm, provisionally at least, by means of this group of symptoms, without any other means of diagnosis, or especially of physical diagnosis, at all. Indeed, it is not necessary that you should even have said a word to the patient, or asked him a question. In some cases you may even make a very good guess at an aneurysm (when the facts are sufficiently characteristic) if the patient is within earshot, and you have not even seen him or known about his case otherwise, as I have occasionally pointed out in the wards, or long ago in dispensary practice, though I by no means advise you to be so satisfied with so guessing . . . and the symptoms . . . are not difficult to discriminate, and are of very great importance in prognosis as well as in diagnosis."

On several occasions I have been consulted by patients who complained of no symptom, laryngeal or other, beyond the cough, but its special characteristics were so distinctive that this symptom alone enabled me to form a provisional diagnosis of aortic aneurysm, which was supported by the physical signs found by the physician, and by the ultimate history of the case. The chief features of the cough are hoarseness and imperfection as to the explosion, but beyond these qualities there are other less significant peculiarities which require attention. It is generally a noisy, and not infrequently a harsh, "brassy" cough, or it may be what Dr. Wylie has described as "bovine cough"—like the cough of a cow. The cow "has no false cords or ventricles of Morgagni; its cough is, therefore, a long, loud grunt or wheeze, without any proper initiatory explosion." In some instances I have seen the qualities of cough just described, after being present for some months, disappear gradually, and remain absent for a time, to return again at a later date—this being probably due to a certain amount of compensation of the laryngeal muscles on the opposite side, and was in two cases coincident with improvements in the quality of the speaking voice, although to all appearances the laryngeal image remained the same as during the earlier course of the case.

In a gentleman examined by me four years ago, and who ultimately developed physical signs of aneurysm of the arch of the aorta, I observed

a very peculiar form of laryngeal cough very early in the history of the case, before the physical signs were distinctive, and, therefore, led to considerable doubt as to the significance of the cough ; the movements of the left vocal cord were impaired, and the ventricular bands failed to reach the middle line during attempted phonation, but the voice was good, and at no time did the patient suffer from stridor. The cough was hard, brassy, and hoarse, but in place of one explosion, as in ordinary coughing, there was a kind of double explosion, one following immediately upon the other, the first being higher in pitch and harsher than the second. For this I could not find any reasonable explanation.

3. In cases of recurrent laryngeal paralysis the *speaking voice* may be little altered from the normal, because of the power of the muscles on the healthy side to compensate for the inefficient action of those of the paralyzed side. In other cases the voice may be impure, and during phonation, in order to throw the cords into tone-producing vibration, the air in the chest is subjected to abnormal pressure, and, as a consequence, if prolonged, the over-exertion of speaking speedily produces exhaustion of the patient's strength and inability to phonate, except in a very imperfect way. In cases of recurrent laryngeal paralysis the voice becomes altered in pitch, impure, and wanting in tone, and on straining to speak loudly the voice readily breaks into a falsetto, which may be of higher pitch than the ordinary voice. On the other hand, the voice may be lowered in register, hoarse, and muffled. The abnormal conditions of voice may be due simply to the imperfect movements of the vocal cords, or there may be other laryngeal or pharyngeal complications, such as acute or chronic catarrh, œdema of the mucous membrane, etc. I have seen more than one case where aphonia was the first and for some the only symptom of what at a later date proved to be aneurysmal pressure on the recurrent nerve. In a patient seen at the Royal Infirmary the voice began to fail three months previous to the time I saw him, and on inspection the left vocal cord was seen to remain stationary in the cadaveric position during attempted phonation or ordinary respiration. At this time he had not suffered from breathlessness, but within ten days he had a severe paroxysm of dyspnœa ; and in a private patient I have observed the same condition of voice for five months previous to other symptoms developing. In this case also the paralysis of the left vocal cord was apparently complete, and at no time was the breathing stridulous. While the alterations in voice are less characteristic, and hence less valuable than the other symptoms we have described as factors in diagnosis, still, when taken in conjunction with stridor and imperfect cough, they materially assist in forming an early diagnosis of aneurysm or of mediastinal tumour.

DR. W. JOBSON HORNE. *The Pathogenesis and Earlier Clinical Evidence of Laryngeal Tuberculosis.*

In text-books on general medicine the isolation of diseases of the larynx and the singular crudity with which these diseases as a group, and laryngeal tuberculosis in particular, are expounded tend to create an early impression that the larynx stands by itself, that its interests are not

intimately wrapped up with those of the body, that its study likewise stands by itself, and must be relegated to departments specially set apart for the purpose. Were the laryngoscope more frequently used in clinical medicine the important bearing the larynx may bring in diagnosis would be better appreciated.

To state that fifty per cent. of the cases of pulmonary tuberculosis under treatment are being overlooked may be a bold estimate, but it is one of which we are daily receiving confirmation. The dead-house teaches us that the stethoscope is deceptive, and that by the time the morbid signs are sufficiently established at one spot to permit of a diagnosis another lobe is usually already involved. Bacteriology is only too often negative at a time when a positive answer would be most useful.

It is unreasonable to suppose that in pulmonary tuberculosis the larynx would stand aloof, and give no evidence of the disease developing in the respiratory tract until the condition of "laryngeal phthisis" is established. True it is that mention is made of a pallor, or anæmia, of the larynx occurring at times in the earlier stages, that the voice may be lost for awhile from functional failure, but these changes are hardly regarded as coming within the range of a laryngeal tuberculosis, but rather as a part of a chronic laryngitis presenting nothing characteristic.

The idea that appears to be more widely held is that laryngeal tuberculosis, or laryngeal phthisis, as it is more commonly and unfortunately termed, may be summed up as infiltration and ulceration occurring in some twenty to thirty per cent. of advanced cases of phthisis, for which there is but little treatment which is palliative, and still less which is remedial. The term laryngeal phthisis is unfortunate; it helps to foster the idea that the disease is a separate entity, and it will presently be shown that laryngeal, apart from pulmonary, tuberculosis, can hardly exist. To restrict our views of laryngeal tuberculosis in this way is equivalent to taking up the study of consumption from the time when cavities have already formed.

Krause and Heryng have shown how even in the more severe cases much can be done to relieve the sufferings, if not to arrest the progress of the disease. But sufficient attention has hardly been given to the earlier recognition of a disease so insidious in its onset that it would seem to have no beginning, and yet so progressive in its character that when unheeded can have but one end.

To ascertain the earlier changes that occur in the larynx of a person smitten with pulmonary tuberculosis, and whether these changes are sufficiently constant and could be put upon a definite pathological basis and used in the diagnosis of the disease at a time when the lungs yielded no signs or only indefinite signs, were the main objects of a research commenced by the author some few years ago.

The present paper confines itself to the threshold of the disease, and can only be regarded as a brief sketch of a piece of work that has taken some years, and not as a complete summary of the results that have been arrived at. The first part is concerned with the pathogenesis, the portal of infection, the beginning and method of tuberculous destruction, the origin and formation of the giant cell. Although perhaps the larynx may

undoubtedly be the most convenient site in the human body for studying pathological principles in either living or dead tissues, it is not suggested that the pathological changes noted are peculiar to the larynx. The second part of the paper deals with the clinical counterparts of these early pathological changes, and are held to be the earliest signs and symptoms not only of laryngeal but also of pulmonary tuberculosis.

The pathogenesis of the disease was worked at in larynges which *post-mortem* presented to the naked eye none of the usual signs of laryngeal tuberculosis, but which had been removed from bodies of persons who had died undoubtedly from tuberculosis. In the examination of these larynges, films were first prepared from the contents of the ventricles and stained for tubercle bacilli, the larynx was subsequently examined microscopically throughout.

The frequency with which the organisms were found within the ventricles of apparently healthy larynges would suggest that the importance of the ventricle as a harbour for tubercle bacilli is deserving of further attention.

Under the microscope the earliest changes noted were in the lymphatics, consisting of a proliferation of the parenchyma of the acini and ducts, with the formation of masses of small round cells, distending and choking the ducts and obliterating the glands, the adjacent and superficial structures at first remaining intact. These changes have been noted in the lymphatics situated in the submucous layer of the walls of the ventricles when a careful microscopic examination of the entire larynx had failed to reveal changes in the lymphatics in other parts. The nature of this cell proliferation was next considered. Is it to be regarded as nothing more than an outcome of a traumatism, or of some simple catarrhal process? or is it peculiar to the lymphatic structure of tuberculous patients? or is it to be attributed to one specific cause—namely, the presence of the tubercle bacillus, and to be regarded as tuberculous disease of the lymphatics? Dr. Horne said that, although he was not prepared altogether to accept or reject the theory that these lymphoid masses were due to a simple catarrhal process, he was now able to demonstrate the tubercle bacilli in the midst of some of them, and was of the opinion that, once having gained an entry into the lymphatic ducts, they acted as an irritant and caused a cell proliferation.

The *fons et origo* of the giant cell in tuberculosis next came under consideration, and by a series of lantern photographs of microscopic specimens its development from the wall of a lymph space was demonstrated. The series showed, first, the tubercle bacilli lying amongst the endothelial cells forming the wall of the lymph space; secondly, the fusion of the adjacent and divided cells; and, thirdly, the separation off of this plasmodial mass as a giant cell. Reference was made to the researches on lepra laryngis by Dr. Paul Bergengrün, of Riga, in which he had shown that the so-called "globi" were bacillary thrombi lying in dilated lymphatics, and that the lepra giant cell developed from the lymphatic endothelium. Although the sections Dr. Horne showed permitted the conclusions that had been drawn, he did not consider that they represented the whole story of the giant cell. If, then, as would appear

to be the case from the foregoing, the tuberculous process commences in the lymphatics, it would be reasonable to suppose that those parts rich in lymphatics would be the more common sites for infiltration and ulceration, whilst such parts as are without glands would escape ulceration, except by continuity. This was clinically verified. The interarytenoid region, the posterior third of the cord, the ventricular band, and the epiglottis (especially the petiolus), are the parts more richly endowed with glands, and these are the parts more commonly ulcerated in laryngeal tuberculosis. The cord itself—that is to say, the functionally more important part of the cord, namely, that part lying between the two small cartilaginous bodies—being free from glands, escapes ulceration, excepting superficial erosion and by continuity. A proliferation of the subepithelial blood vessels was demonstrated as taking place side by side with the cell proliferation.

With regard to the muscles, changes were described as occurring at an early stage in the fibres, and traced to the glands lying in close proximity. These changes are brought into evidence by an early functional failure, which is mainly myopathic in origin.

The earlier clinical evidence of laryngeal tuberculosis, the clinical counterparts of these early pathological changes, were next described. Whilst clinically investigating these, it was necessary—inasmuch as only slight departures from the normal were being looked for—to retain a control mental image of a normal larynx. This was done by constantly examining a large number—some hundreds in all were examined—of larynges in healthy subjects, or, at least, presumably free from tuberculosis. And it was whilst in search of normal larynges that some important aids to the present research were stumbled upon. The larynx was examined in three hundred and fifty-nine consecutive cases of pulmonary tuberculosis, or cases in which there were reasons for suspecting pulmonary tuberculosis. The larynx was also examined in a large number of patients suffering from pulmonary diseases other than tuberculosis.

The points to which attention was mainly directed were the following :

- (1) disturbances of sensation, hypæsthesia, hyperæsthesia, paræsthesia;
- (2) colour changes, anæmia, hyperæmia;
- (3) functional disturbances;
- (4) impaired movements of the vocal cords, apart from paralysis; and
- (5) changes in the contour of the larynx due to slight œdema. Inasmuch as disturbances of sensation are subjective, too much significance could readily be attached to them, if taken alone, as a clue to pulmonary tuberculosis; but, in regarding them only as evidence of “hysteria,” one is apt to miss important clues to pulmonary tuberculosis.

Hypæsthesia was not infrequently associated with anæmia of the soft palate; and it might be stated that, unless the subject is wilfully hostile to laryngoscopy, the more pallid the soft palate the greater the tolerance to laryngoscopy; and when in the course of the pulmonary condition the anæmia passes off, the tolerance often goes with it.

Anæmia of the laryngeal mucosa was noted as present in varying degrees in one hundred and fifty-seven out of three hundred and fifty-nine cases. At times it was universal. When patchy, it was confined to points where the mucosa was more easily exposed to tension, occasioned by a

slight œdema in association with the proliferation of subepithelial vessels. It was as frequently met with in men as in women.

Hyperæmia was noted in one hundred and seventeen out of three hundred and fifty-nine cases, and rather more frequently in males. This hyperæmia must be regarded as a feature distinct from and not amounting to acute laryngitis. Acute laryngitis did not occur so frequently as one might previously have anticipated. The hyperæmia was often transient, within a few days giving way to pallor; but at times it was most persistent. These phenomena were also attributed to the proliferation of subepithelial vessels.

Disturbances in the vocal function were most frequently met with, often transient, not amounting to more than a weakness of voice or loss of tone. The production of voice called for a greater effort. There was a forgetfulness of office—a sluggishness of one or both cords to act; so that there was phonatory waste before voice was produced. And in connection with this required effort it may be mentioned that, in early tuberculosis, when the speaking voice is weak the singing voice may be quite clear. Then the singing voice may suddenly go. This causes the patient to seek advice; and the possibility of commencing tuberculosis should not be forgotten. Transient dysphonia was more commonly met with amongst women, and especially young married women, during pregnancy.

Not infrequently in cases of so-called "hysterical aphonia" thoracic signs of pulmonary tuberculosis had been subsequently made out, and the possibility of diagnosing "hysterical aphonia" in the presence of pulmonary tuberculosis should be thought of. Impaired movements of the vocal cords, apart from paralysis, were described, and considered to be myopathic in origin and due to the changes noted in the muscle fibres. With regard to transient œdema of the laryngeal mucosa, the contour in a large number of larynges in early pulmonary tuberculosis when compared with that existing in a normal larynx was found to be partially lost, more particularly in the interarytenoid and arytenoid regions along the ventricular bands, and at the base of the epiglottis. A fine crenating or fringing occurs upon the folds of mucous membrane in the interarytenoid space, not sufficient to be called an excrescence, but met with sufficiently often in pulmonary tuberculosis as to be deserving of attention. An early but transient loss of symmetry in the outline of the arytenoid eminences was noted. The ventricles become less patent, and this loss of patency was commonly associated with some œdema of the inner wall of the ventricular band, which was ascertained clinically in endeavouring to pass a curved platinum loop into the ventricle in search of tubercle bacilli. A slight œdema of this part of the ventricular band, together with an enfeebled action of the compressor sacculi laryngis, must effectually retain bacilli-laden sputum within the ventricle when once it had been lodged there in the act of coughing. Moreover, it was pointed out that the choking by a cell proliferation of the ducts of the muciparous glands opening into the ventricle, the closure of the ventricle by the œdema secondary to the proliferation of vessels, and the failure of the compressor sacculi laryngis through changes in the muscle fibres

to discharge its contents, all combine to deprive the cords of the mucus necessary for their lubrication. The cords lose that semi-translucent mother-of-pearl sheen, and present an opaque pallor more approaching a dead ivory white. With insufficient lubrication superficial erosions occurred; this did not amount to ulceration, as met with elsewhere in the larynx, inasmuch as the essential element was absent, namely, the lymphatics.

[A lantern demonstration was given of photographs of the microscopic sections on which the conclusions were based, and some of the more important sections were shown under microscopes.]

DR. HAMILTON A. BALLANCE. *A Case of Septic Thrombosis of the Lateral Sinus, due to Streptococcus Infection. Secondary Abscesses. Operation. Recovery.*

L. B., aged twenty-four, pregnant five months with her first child, was admitted into the Norfolk and Norwich Hospital, November 30th, 1897.

History.—The present illness dates from three weeks previous to admission, when pain in the left ear, frontal and occipital headache, and sickness began. The pain has increased in severity up to the present time. The sickness has been frequent but not every day of the illness. She was repeatedly sick on Nov. 28th.

Four or five days from the first onset of the illness, she had a shivering attack lasting about ten minutes. She has had about six of these since, and the last one was on Nov. 26th.

On Nov. 23rd, that is, one week before admission, a discharge of offensive matter began from the left ear. The patient is positive that there had never been any previous discharge, and on carefully questioning the mother she is also quite certain that her daughter had no discharge from either ear during childhood. The right ear has never given any trouble, and the hearing with it is normal.

The patient suffered from measles in childhood, but not from scarlet fever. She has been in bed for a fortnight.

Condition on Admission.—The patient is rather a wasted woman of twenty-four, with sallow complexion, and looks very ill. Temp. 98·6°. Pulse 100. There is profuse local discharge from the left ear, with some swelling and œdema over the mastoid. On examining the meatus, the posterior wall is greatly swollen, reducing the canal to a narrow chink, so that the membrana tympani cannot be seen. In the centre of the posterior wall there is a discharging sinus lined by prominent granulations, and a little pus can be made to ooze from this by pressure over the upper part of the mastoid. This process is tender, but there is neither swelling nor tenderness below the mastoid in the neck.

There is marked double optic neuritis, more intense on the left side. Pupils, moderate size and react. There is no paralysis anywhere, nor loss of sensation. Power of flexion of the knees is good. Both knee jerks are much exaggerated, rectus jerk and ankle clonus being also obtainable on each side, more marked on the right.

The patient lies by preference on the right side.

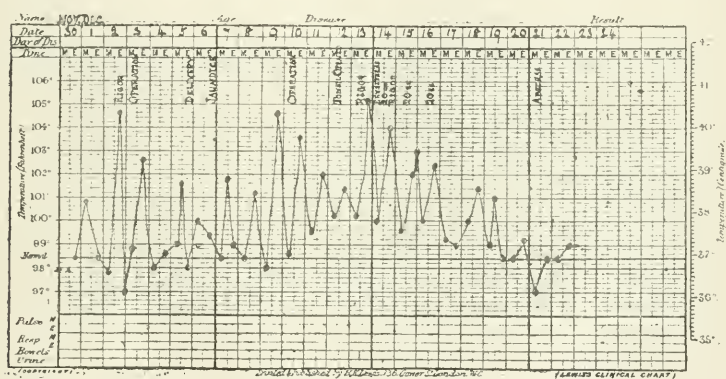
Dec. 2nd. This afternoon the patient had a shiver, and the temperature

rose to $104^{\circ}6'$; pulse, 134. I slit the sinus in the posterior wall of the external auditory meatus to give freer vent to the pus.

Dec. 3rd. As the temperature was again rising, although no further rigor had occurred, longer delay was contra-indicated, and the mastoid was operated upon.

About two drachms of pus were found on the surface of the bone, and as the membranous meatus was turned forwards out of the osseous meatus a hole was seen in the posterior wall of the latter exactly corresponding to the sinus previously mentioned as present in the external auditory canal. A seeker inserted into this hole passed directly into the antrum. The antrum, attic, and tympanum were then thrown into one cavity by the removal of their outer walls, and much pus and cholesteatomatous debris cleared away.

In removing the posterior part of the mastoid, two thin white sequestra, about one-quarter of an inch in diameter, were taken away. Immediately two or three drachms of pus in a sudden gush escaped from the



lateral sulcus, these sequestra having evidently formed part of the groove. The lateral sinus was then exposed for one and a half inches by the removal of bone with cutting forceps. Its outer wall had sloughed, and I pulled out from the interior of the sinus a cylindrical slough, one inch long, the remains of the infected thrombus.

After exposure of the internal jugular vein by an incision at the anterior border of the sterno-mastoid, the vessel was divided between two ligatures above its junction with the common facial. It was not thrombosed, but collapsed owing to the fact that there was no blood coursing down its upper part. The lower ligatured end was allowed to retract, but the upper one with the ligature upon it fixed in the upper angle of the neck wound, which was then entirely closed.

When all visible disease had been removed from the mastoid region and the wound cleaned it was stuffed with gauze, after a horizontal division of the membranous meatus posteriorly, to allow a large auditory canal to permanently form.

Dec. 5th. The patient has been much relieved since the operation, and, although the temperature reached $101^{\circ}6'$ to-day, it was normal the

whole of yesterday. This evening the patient was delivered of a still-born child without difficulty. It was not offensive, and had probably died during the septic illness of the mother.

Dec. 6th. Jaundice is commencing to-day.

Dec. 7th. Patient has still a temperature of 101.2° every day, but general condition is improved; pulse, 100-30. The ligature on the upper segment of the divided internal jugular was taken off this morning, and the vessel allowed to remain open at the upper end of the wound in the neck. No pus exuded from it on removal of the ligature. The mastoid wound is getting more healthy. The liver is not felt. The lungs are uninvolved, nor are any joints affected.

Dec. 9th. There is a little swelling and tenderness in the upper part of the neck just below the mastoid, and about one drachm of sero-purulent fluid escaped from the open end of the internal jugular vein. There is slight double tonsillitis.

Dec. 10th. The temperature reached 104.6 yesterday evening, but without a rigor, and as it was thought that pus might be pent up in the depths of the upper wound, at the junction of sigmoid sinus and internal jugular vein, the patient was again put under chloroform and this region explored by the further removal of bone, but no collection of pus was found. The wound in the neck had, however, become infected by pus running down the jugular, so all the stitches were removed, and it was left widely open and stuffed with gauze.

Dec. 12th. The last two days the patient has been greatly distressed owing to acute tonsillitis on the left side. She has had intense pain with great swelling of the tonsil and uvula, and has been able to swallow nothing at all. This morning I opened the tonsil and let out one to two drachms of creamy pus. The patient nearly lost her life about this time from cocaine poisoning, when a ten per cent. spray was used for the throat, preparatory to incising the tonsil. She became unconscious, with ghastly pallor, widely dilated pupils, imperceptible pulse, rapid respirations, and clonic convulsions, but she ultimately came round.

Dec. 14th. Since opening the tonsil the throat has improved, the patient can now swallow and the voice has returned. Last evening there was a rigor of five minutes' duration, and a temperature of 105.2° . This morning there is a butterfly patch of facial erysipelas over the bridge of the nose and inner part of each cheek, quite away therefore from the wound behind the ear. The patient was at once isolated and given twenty cubic centimètres of streptococcus antitoxin. Another rigor of ten minutes' duration, with a temperature of 104° , occurred this evening.

Dec. 16th. The patient has had two more doses of antitoxin yesterday and to-day, and the temperature is gradually falling. The rash has spread over the whole of both cheeks, but the colour is fading. During the course of the erysipelas the patient has been extremely prostrate; pulse, 130 to 140, and has had much bilious vomiting. The tongue is dry, and the urine shows a cloud of albumen. The jaundice continues about the same, but has never been intense. The patient has been so weak, the last day or two, that it was quite impossible to say whether or no she would last another twenty-four hours. The neck wound is less

sloughy, and the mastoid is becoming covered with fairly healthy granulations.

Dec. 17th. Rather better. No vomiting to-day. Tongue moist. In the region of the right deltoid there is a fluctuating swelling three inches in diameter, and the patient has been complaining of pain here for two days. Movements in shoulder joint hardly impaired at all.

Dec. 19th. Face peeling. Jaundice less. Grip of hands and power of flexion of knees is still very weak. The knee jerks and plantar reflexes are exaggerated, and rectus jerk and ankle clonus are still easily obtainable on both sides. The double optic neuritis remains intense; there is often frontal or occipital headache and occasional sickness.

Dec. 21. The swelling on the shoulder was incised to-day under the spray, and two ounces of thin, watery, inodorous pus evacuated. The track led through the deltoid, and the cavity was probably in the sub-deltoid bursa. No communication with the joint could be made out by a rapid examination with the finger inserted into the abscess.

Jan. 1st, 1898. Since the last note the temperature has only occasionally been raised above the normal, but the patient has been very prostrate at times, with sickness. Every day or two pain in the abdomen and across the back. The urine has contained much pus and a few casts, there being a deposit of one inch of pus in the bottom of the urine glass. She passes only ten to fifteen ounces of urine daily. As the patient does not seem to be able to throw off the general prostration due to the infection, a further twenty cubic centimètres of antitoxin were injected to-day. She is wasting greatly.

Jan. 3rd. Is distinctly better since the antitoxin, and taking food well. She expressed a wish to get up to-day.

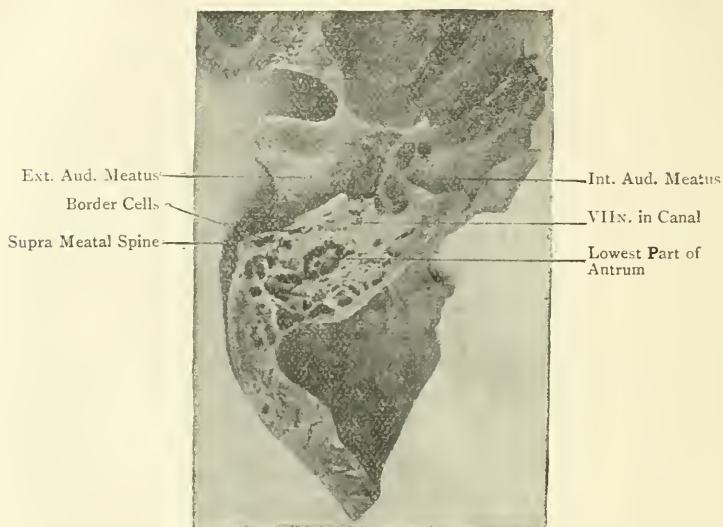
Jan. 9th. Shoulder healed. Getting up to-day for the first time. Only a trace of albumen and pus in the urine now, with a few white corpuscles and granular casts. The quantity of urine per diem is normal. Knee jerks well marked. Rectus jerk and ankle clonus have disappeared.

Jan. 13th. The patient has had to keep to her bed again owing to a hard, deeply-situated, tender swelling appearing in the calf of the right leg, and the temperature has reached 101° every evening for the last few days. She was given another twenty cubic centimètres of antitoxin to-day to see whether it would be possible to make this swelling in the leg subside without operation. Hot fomentations were applied to it.

Feb. 9th. Two further injections of twenty cubic centimètres of antitoxin were given—one on January 17th, and the other on January 21st—but the hardness and tenderness in the right calf has continued, although the actual swelling has been small. The skin is still quite uninvolved, but the temperature has been 101° to 102° every night, though normal in the morning. To-day, therefore, under the spray, I made an incision over the centre of the calf, and evacuated three ounces of creamy pus from under the gastrocnemius and soleus. There was no bare bone. The optic neuritis has almost disappeared. The mastoid and neck wounds are granulating healthily.

March 21st. After the calf incision, recorded in the last note, the temperature rapidly fell to normal, and has remained there since—only a

small sinus now existing in the calf; but to-day the temperature suddenly rose to $103^{\circ}6$, with a sense of chilliness and some nausea. The patient complains of pain in the right calf, which is rather swollen.



Horizontal Section of Left Temporal Bone of Adult, through upper part of External Auditory Meatus: Membrana Tympani and Ossicles removed.

March 28th. As seen in the chart the patient has passed through a period of severe pyrexia, due to an attack of erysipelas in the right leg, starting from the unhealed sinus in the calf. Swelling and redness extended from the hip to the ankle, with much pain in the limb. Eighty cubic centimètres of antitoxin were used throughout the attack, but its immediate effect on the temperature was not evident. Now, however, there is no fever, and it seems unlikely to return; the patient is much better, and the swelling is gradually subsiding. The sinus has had to be slit up a little, to enable some pent-up pus to find its way out.

April 21st. The temperature remained down until the last few days, and as it seemed the leg did not discharge freely enough, I opened up the calf under ether to-day, by a four inch incision, down to the deep muscles, and kept the wound widely open by gauze packing.

May 29th. The leg is healing healthily. The left ear has been quite dry for some weeks, and the site of the operation behind it is all depressed and soundly scarred over, leaving no fistula. The neck has quite healed. The watch is only heard on the left side on contact. The optic neuritis has entirely disappeared, and the urine is normal, free from albumen and pus.

June 25th. Went to convalescent home. In very good health, except for some loss of flesh. Leg almost healed.

Remarks.—This case seems to me to illustrate the fact that these patients do well even in the presence of secondary foci if the primary source of infection is thoroughly dealt with and cut off. To recapitulate for a moment the conditions which were met with here :—

Sinus thrombosis, with subdural abscess.

Premature delivery.

Suppurative tonsillitis.

Two attacks of erysipelas.

Jaundice.

Abscesses in the shoulder, leg, and kidney.

Pathology.—Pure cultivations of the streptococcus pyogenes were obtained from all the foci from which tubes were inoculated, namely, mastoid, neck, shoulder, and calf, but in the mastoid, in addition, there was present a bacillus, but this appeared quite an accidental contamination, and not of a pathogenic nature. Hence it was obviously a rational procedure to give the streptococcus antitoxin here, and a true test of its value, as contrasted with the indiscriminate use to which it has been put in any temporary pyrexial state, such as that met with in the puerperium, and often due to a mere sapræmic condition, and dependent on other organisms rather than the streptococcus.

It is interesting to note that, although the streptococci obtained entrance into the blood-stream, as evidenced by the secondary abscesses, yet none settled in the uterine wall, which had undergone the traumatism in connection with delivery ; and also that cutaneous erysipelas—which, likewise, is dependent on the streptococcus—complicated this case on two occasions.

Now, the streptococcus is usually associated with virulent and rapidly-spreading inflammatory conditions ; but the abscess in the calf, although due to this organism, was characterised by its extremely slow progress, the calf hardly being perceptibly larger at the end of a month of the abscess than at the end of the first week. I believe this to be due to the effect of the antitoxin administered during the course of its formation.

After noting the organism obtained from the abscess, I forwarded an agar culture to the Clinical Research Association ; and their report was to the effect that the tube contained “an extremely feeble growth of pure streptococcus pyogenes.” The Association were quite unaware, when they sent their report, that the patient had been treated with antitoxin. Its effect, I believe, was to inhibit the growth and attenuate the virus of organism present. The possibility that the second attack of erysipelas was due to a different variety of streptococcus may be mentioned ; and this may explain the severity of the attack, although antitoxin was administered. I have never seen, however, an erysipelas of the face subside so quickly as it did in this patient.

The position of the fistula in the posterior wall of the external auditory meatus, as in this case, is extremely rare. The usual site for bony perforation in mastoid disease is, as is well known, on the outer aspect of the process—especially in young people. But if the mastoid disease spreads

to the "border cells," in the process, which abut on to the external auditory canal, then perforation into this channel may occur. In their work on mastoid abscesses, Broca and Lubet-Babon have found only three such instances in one hundred and forty-six mastoids operated on by them—*i.e.*, two per cent. I have shown, in the photograph, the position of these "border cells" in a horizontal section that I made in the temporal bone of an adult. It will be noted what a thin layer of bone separates some of them from the surface.

I have during the last few weeks had another case of suppuration in these "border cells" in a man of fifty, who was admitted into the Norfolk and Norwich Hospital, with septic meningitis, secondary to otitis media, of one month's duration. The meningitis was the result of the infection spreading through to the internal ear, and then along the internal auditory meatus to the meninges; but in operating on the mastoid, a collection of pus about a quarter of an inch in diameter was found in the cells adjacent to the meatus, but the antrum was free. The man subsequently died with purulent leptomeningitis on both sides and over both base and vertex of the brain.

Diagnosis.—This patient had the headache, vomiting, repeated rigors and optic neuritis of sinus thrombosis, as well as the local signs of mastoid disease; but the history of discharge for only one week, which I made out to be quite genuine, certainly put me off the correct diagnosis at first.

However, sigmoid sinus thrombosis is known as a rare complication of acute otitis media, and MacEwen mentions a case in which it occurred after only eight days of aural discharge, complicating a case of diphtheritic sore throat.

Again, Erskine, of Glasgow, in 1890, described a case of sinus thrombosis in a man of seventy-two, where there was no perforation of the membrana tympani at all—although disease had long been present, and progressing insidiously had at last involved the sinus, after producing extensive caries in the interior of the bone.

In my case there must have been long existing otitis because of the sequestra found in the mastoid, but this had gone on without external discharge of pus until one week before admission.

Dr. JOHN MIDDLEMASS HUNT. *On the Relation of Fibrinous Rhinitis to Diphtheria.*

At a meeting of the British Laryngological Association in November, 1891, I read notes of a case of fibrinous rhinitis, and showed casts from the nasal passages. The case was in every way a typical one, as the patient remained in good health, had no albumen in the urine, no glandular enlargement, and no subsequent paralysis. The discomfort arising from the nasal obstruction, and the profuse watery discharge, were the only symptoms.

I should mention that no bacteriological examination was made, and the diagnosis rested entirely on the clinical history of the case.

Since then I have met with three cases presenting the clinical characters of fibrinous rhinitis, but all of them have been so related to

diphtheria as to make me thoroughly distrust any case based on clinical evidence alone.

I propose to bring these other cases briefly before your notice.

The first was that of a medical man, practising near Liverpool, whom I saw on February 15th, 1894. He was in good health, and came to me on account of distressing nasal obstruction with abundant watery discharge from the nostrils, which had troubled him for about a week. He had not been attending any cases of diphtheria, but thought he might have conveyed some poisonous material to the nasal cavities while performing a *post-mortem* examination in a case of ulcerative endocarditis. On examination I found both nasal passages lined with well-formed, thick, white membrane, which left a bleeding surface when torn off with forceps.

From the complete absence of all constitutional symptoms, and remembering my former case, I assured the patient he was only suffering from fibrinous rhinitis, and that he would be all right in a few weeks. I did not see him again, and unfortunately no examination was made of the membrane I had removed.

It was six months later before I learned that a fortnight after his visit to me, and before the nasal trouble had gone, membrane appeared on the tonsils, and he went through a severe attack of diphtheria followed by extensive paralysis. I need hardly say that I have not been so confident about the diagnosis of fibrinous rhinitis since.

My second case was one of a little girl, who came to the Royal Infirmary on March 19th, 1896, complaining of nasal obstruction, which had been present about a week. On examination both nasal cavities were found to be lined with membrane, which was thinner than in the former cases, and more friable, so that it was not possible to remove a large piece with the forceps. The mucous membrane underneath was raw and bleeding. There was no fever, no albumen in the urine, no glandular enlargement, and no deposit on the tonsils or pharynx.

Portions of the membrane were sent to Prof. Boyce's laboratory, where cultivations and inoculation experiments were made. The report was that the inoculations gave a negative result, and the cultures showed streptococci and staphylococci, but no Lœffler bacilli.

Subsequent inquiry showed that the patient had suffered from "tonsillitis" a month or two before, followed by paralysis of the palate, of which there was still some evidence when she came under our notice. We also found that several other children, who were associated with her at that time as "fairies" in a local pantomime, had been laid up with bad throats.

The third case was one I saw in November, 1896. The patient, a little girl of ten, was sent to me by the family medical man as a case of chronic nasal catarrh. She complained of obstruction of, and discharge from, the left nostril, which had begun with a cold in the head eight weeks before. She was then for one day in bed, but since had been running about without any complaint except the nasal discharge. During these eight weeks she had never any sore throat.

On examination there was a recent adhesion to be seen between the

anterior end of the lower turbinal and the septum, and behind were some patches of distinct membrane with muco-purulent secretion. There were no enlarged glands, no albumen in the urine, and no paralysis.

On inquiry I found that a week after this patient began to have the nasal trouble a servant in the house had a bad sore throat, and was in bed for eleven days, and that two weeks later a brother, aged two years, died of croup. The servant was subsequently a patient at the Royal Infirmary with diphtheritic paralysis.

Thus, in four cases bearing the clinical characters of fibrinous rhinitis, three were directly associated with diphtheria. In one case pharyngeal diphtheria began in the third week of the nasal trouble; in another the rhinitis occurred some weeks after convalescence from an attack of diphtheria; and in a third it was followed within a few weeks by two cases of genuine diphtheria in the same family.

Now, it may be said that of my four cases only the first was one of fibrinous rhinitis, and all the others were cases of nasal diphtheria. But is there any way of distinguishing these two diseases clinically? Formerly it was thought that primary nasal diphtheria was a very rare disease, and that it was almost always attended by severe constitutional symptoms. We now know that in the form of fibrinous rhinitis it is not at all uncommon, and often runs its course with little or no constitutional disturbance.

If we turn to the text-books for the clinical characteristics which separate the two diseases, we find Bosworth relies upon one symptom, which he says is pathognomonic of fibrinous rhinitis, namely, that "the false membrane is easily detached from the mucous membrane beneath it without causing hæmorrhage." This, I need hardly say, is contrary to the experience of nearly every other observer. Another American writer, who has seen many cases of fibrinous rhinitis, Dr. Hamilton Potter, says, "the membrane is firmly attached to the parts beneath, and is only detached with violence, leaving a bleeding surface."

Dr. McBride is of opinion that "the intense local discomfort, together with the absence of all constitutional symptoms in typical cases, form an easily recognized combination." As Dr. McBride had only seen one case when he wrote these words he would probably modify them now as the result of extended experience.

Dr. Walsham writes, in his recent book on nasal diseases, "The points to be chiefly relied on in distinguishing fibrinous rhinitis from nasal diphtheria are the absence of constitutional symptoms, of glandular enlargement, of albumen in the urine and of paralytic sequelæ." But it has been repeatedly shown that all these symptoms may be absent and yet the Loeffler bacillus be present in the membrane.

I am afraid there are no clinical characters on which we can rely in distinguishing the two diseases, and our one method is to turn for help to the skilled bacteriologist. The results of bacteriological examination have been to demonstrate the presence of Loeffler's bacillus in an ever-increasing proportion of cases of so-called fibrinous rhinitis.

One of the most valuable contributions to this subject is the paper of Dr. Edmund Meyer in the "*Archiv. für Laryngologie*," Band IV., Heft 2. In twenty-two cases of fibrinous rhinitis, in which he made bacteriological

examinations with inoculation experiments, he found in nine cases streptococci and staphylococci only, while in thirteen others the Loeffler bacillus was present in virulent form. He also remarked that in their clinical course the cases with diphtheria bacilli showed no difference from those without. He was of opinion, too, that the cases in which the Loeffler bacillus was absent were those in which the disease had been present for a long time, and that the bacillus might have been found in them also if examined earlier.

Prof. Kanthack speaks still more strongly in Allbutt's "System of Medicine." He says, "A curious and important pathological condition is the so-called rhinitis fibrinosa. Clinically such cases are not diphtheria, but pathologically and bacteriologically they are so; in the cases I personally examined I obtained, as others did, large numbers of virulent diphtheria bacilli."

I might venture to summarise our present position regarding fibrinous rhinitis to be as follows :—

1. While admitting that other bacteria besides the diphtheria bacillus may give rise to membranous exudation in the nasal passages, the vast majority of cases of fibrinous rhinitis are due to the Loeffler bacillus.
2. That it is impossible on clinical grounds alone to distinguish fibrinous rhinitis from mild nasal diphtheria.
3. That all cases of fibrinous rhinitis should be regarded as diphtheria until the contrary has been proved by reliable bacteriological investigation.

DR. PEGLER. *On Bilateral Tumours of the Septum—Lymphoid and Erectile.*

The object of the paper was to call attention to certain simple growths of the septum nasi which had not apparently been hitherto described in rhinological literature.

The tumours were not interesting pathologically only, but were important factors in the causation of

- (1) Nasal obstruction ;
- (2) Paresis of the soft palate ;
- (3) Affections of speech (sigmatic dyslalia).

Of the lymphoid bodies, the writer's experience had been limited to a single case (some particulars of which have already appeared in this Journal), in which the growths, being attached by a broad tough pedicle on either side, the septum, about three millimètres from the posterior free border, projected into the naso-pharynx and caused almost complete nasal obstruction. They were oval in shape, pale in colour, and mammillated on the surface. Microscopically they consisted solely of lymphoid tissue, encapsuled by ciliated epithelium; lymphoid follicles crowded the entire field of section. There were no concomitant adenoids in the naso-pharynx, but large moriform hypertrophies grew from the inferior and middle turbinates. Some light might, perhaps, be thrown upon the origin of these lymphoid tumours by a study of the histology of the erectile bodies about to be described.

These appeared as parallel longitudinal ridges, one in each nasal

cavity, pink, very broad based, lobulated at intervals, and extending almost the entire length of the septum downwards and forwards at the level of the tubercle.

Microscopically, they were chiefly composed of the normal erectile tissue of the septum, but were remarkable for exhibiting masses of lymphoid cells ranged at intervals close to the periphery in the lymphoid area. They looked much like isolated bodies—true follicles—at first sight, but, as Wingrave had remarked, they were evidently more correctly to be regarded as transverse sections of rod-like prolongations from the subepithelial lymphoid layer of the septum. Might this tendency to out-growth on the part of the lymphoid element of the septal tissue help to explain the occurrence of the previously mentioned bodies which consisted of lymphoid tissue solely? The etiology of these longitudinal masses was obscure. In Dr. Pegler's case they were associated with extensive ethmoidal disease, and very large granulation polypi, and until these had been partially removed the septal growths were practically obscured. But in a somewhat similar one recently exhibited at the Laryngological Society of London by Arthur Cheatle the concomitants were polypoid hypertrophies of the middle turbinal and paroxysmal sneezing. Wingrave's suggestion that the tumours might be regarded as hypertrophic over-growths of the tubercle of the septum was a good one, and, whatever the fact might be worth, it was true that longitudinal mucous membrane ridges (representing the tubercle?) were normal appendices to the septum in certain lower mammals.

The *treatment* of the lymphoid tumours had been removal by the cold snare and spoke-shave, aided by a finger in the naso-pharynx. It had required several sittings to remove those described owing to their toughness, but proneness withal to elude the grasp of the instruments. The septum when exposed by their dislodgment appeared at least three times its normal thickness.

The *erectile growths* were successfully detached with a curved probe-pointed tonsil knife, the snare being used to engage what had escaped abscission.

DR. PEGLER. *An Operation for the Removal of Deformity arising from Fracture of the Triangular Cartilage of the Nose.*

The patient was a male, aged twenty-seven, who had received a blow from a cricket ball a year ago (July, 1897), the ball striking the nose from below.

He gave the following history :—

There had been a great deal of swelling, and also discharge from the nostrils in consequence of the injury. The swelling subsided, but the discharge continued; and he was admitted as in-patient in a provincial hospital. The ridge of the nose was at this time swollen (boggy?) and red. Some operation was performed, and an india-rubber splint was placed in each nasal cavity.

When the patient consulted the writer in June, 1898, there was a scar along the dorsal surface of the nose from the root nearly to the tip. The bridge was thrown into especial prominence on account of the

depressed and sunken position of the triangular cartilage, which, together with the lateral cartilages, were detached in some way from the nasal bones. The deformity was so considerable as to interfere seriously with the patient's prospects in business; and he was willing to undergo any operation that might be proposed for his benefit.

On examining the interior of the nose, a prominent cartilaginous spur, shaped like a spine, obstructing breathing considerably, was seen in the left nasal fossa, but there was nothing specially observable on the right side. The finger, introduced into the nasal cavities, detected what appeared like a splitting of the anterior margin of the triangular cartilage into two lateral portions; which could be squeezed together, but only to separate again when the pressure was taken off. Speculation as to the explanation of this was of little use, as it was evident that the dislocation of the triangular cartilage was accompanied by a general smash up of the non-bony structures; and, in addition, it had been followed by some surgical manipulations. The prominent and pointed cartilaginous spur in the left cavity bore testimony to the force of the original injury.

The patient was shown to the Laryngological Society at its June meeting, and some valuable suggestions were made by the members as to the best way of dealing with the deformity.

On June 17th, Mr. Walsham was asked to see the case in consultation; and, in consequence, an operation was performed on June 22nd. Dundas Grant's suggestion as to the removal of the nasal prominence was carried into effect; but the writer has to express his obligations to Mr. Walsham for many others of great ingenuity, as well as for his valuable assistance at the operation.

Chloroform having been administered, an incision was made along the middle line of the nose, following the original scar, to within a quarter of an inch of the tip. The integuments were dissected back, close down to the bone and cartilage, and held aside by retractors.

The next step consisted in threading a rather stout silver wire through the depressed cartilages from side to side, incorporating the two surfaces that appeared to have separated, and taking care not to encroach upon the mucous cavities by feeling with the tip of the little fingers that the needle did not enter them. The cartilage was now under control, and could be raised by the wire at will.

The second half of the operation consisted in sawing through the projecting angle of the nasal bones from above obliquely downwards and forwards until the cartilaginous articular surface was reached, and at this point the detached piece (which consisted in reality of two portions, a larger on the right, chiefly cartilage, and a smaller, bony, on the left) was turned down, and made to assist in filling up the hollow below. A hole was next drilled through the nasal bone, above the sawn surface, with a centre-bit, and one end of the wire that had been employed to perforate the triangular cartilage was carried through it. In this way gentle upward traction could be made upon the depressed portion, so as to cause it to regain to some extent its old position.

The ends of the wire were next brought together, twisted over the turned-down fragments of bone and cartilage, and trimmed, so as to lie

quite flat on the bridge of the nose. The surface having been thoroughly cleansed with antiseptics, the flaps of skin were united by about half-a-dozen catgut sutures, and sealed down with a painting of collodion.

There was a little inflammatory reaction during the first two or three days, with some oedema in the immediate vicinity of the wound, but this quite subsided under ice bags. When in a week's time the dressings were removed, the upper and lower portions of the wound were found healed by first intention, but the middle stitch or two had burst through, and some pus was escaping. A dressing of red lotion caused the hollow to granulate up, and an injection of Dobell's solution added a great deal to comfort, and to the breathing facilities of the nose. A day or two later the patient was given a clip to wear, which helped the plaster in keeping the edges together. A small central granulation, diminishing in extent every day, was all that remained at the time of writing this abstract.

The tension upon the wires being very considerable, and the pressure upon the turned-down fragments (whose blood supply cannot be great), opens a question as to the ultimate fate of the latter, and as to how long the present improved position of the depressed cartilage may be expected to last. But in any case it seems to the writer that a line has been struck out in the treatment of a rather common deformity, which, with suitable modifications and further improvements in subsequent cases by other surgeons, may lead to a useful operation.

DR. G. JACKSON. *On Curetting for Suppuration in the Middle Ear, illustrated by a Case of Supposed Malignant Growth.*

It is scarcely necessary at this time of day to insist on the necessity of curetting the middle ear in cases of obstinate suppuration, formation of granulation tissue, bone affection, and the like, but I venture to bring the following case before you as illustrating its desirability, even after the return of growth, which had some appearance of malignancy. I saw the case first in May, 1896, with Dr. R. Simpson, of Plymouth, who has furnished me with the following history.

The patient, a lady, aged about fifty, had, in May, 1894, symptoms of labyrinthine hæmorrhage, produced apparently by violent sea-sickness, which left her with tinnitus, and loss of bone conduction on one side—the left. Not long after this she was in an accident, due to the giving way of some planks of a platform, and her ears got filled up with lime and mortar. It is probable that this was not properly removed at the time. She did not complain of any other symptom than the tinnitus and deafness before referred to, until February, 1896, when she began to get pain in the ear. One day, when in a stooping position, the ear suddenly burst out bleeding; the bleeding relieved the pain for a time, then it returned. In a few days she had a second attack, which again gave her relief. When examined, after this, by Dr. Simpson, he found the ear (meatus) full of growth.

When I saw her in May, 1896, there were polypoid granulations in the meatus of the ear, with discharge, and very defective bone conduction. As local treatment had been of no avail, I removed all the granulations by curetting, in June, 1896. There was very considerable

thickening of the tissue of the external meatus, near the orifice on the inferior wall, possibly overgrowth of the sebaceous glands; this I also removed. In spite of subsequent treatment, careful syringing, packing with gauze, the application of chromic acid, galvanic cautery, etc., the growth returned, and in July I again removed it, and also scraped out a sinus which had formed behind the ear, following an abscess, which formed over the mastoid process, just after the first operation. By September, 1896, the sinus was closed, and the tympanic cavity nearly healed, and discharge stopped. I might say that the locality she lived in was damp. The improvement took place whilst away from home. On her return the growth again started, and developed rapidly, in spite of treatment by chromic acid, galvano-cautery, etc.

At this point she consulted Sir William Dalby, who suspected malignancy, and suggested if any further operation was done that it should involve removal of a considerable portion of the mastoid. I might say that the sinus had opened up again. A week after she saw Sir W. Dalby she had two serious attacks of facial erysipelas, beginning at the affected ear, and spreading all over the face. In May, 1896, she removed to a healthier locality, and I performed a third operation, completely curetting out the middle ear and meatus, and also opening up the sinus behind the ear, and introducing a drainage tube through the sinus into the meatus, between the cartilaginous and bony meatus, and bringing it out at external ear. By careful after treatment the discharge stopped, and the whole thing healed up. I should say that a small portion of the growth was examined microscopically before the final operation, and was pronounced to be merely granulation tissue, and probably of a tubercular nature. Subsequently to the operation a larger piece, removed at the time from the deeper part of the meatus, was examined, and was stated to contain evidence of malignancy. I may say that at the present time she is quite well, and there is no return of the growth, although, as might be expected, the tinnitus and deafness continues.

Cancer of the middle ear is rare. The starting point of epithelial new formation is most frequently the auricle and the external meatus, less frequently the tympanic cavity and the mastoid process.

According to the observations of Schwartz, Lucae, Kidd and others, epitheliomata proceeding from the middle ear arise either during an existing suppuration of the middle ear, or after exhaustion of carious processes in the temporal bone. For this reason the growths protruding through the perforation of the membrana tympani are first taken for granulations or polypi. This was so in this case, and their rapid return after repeated removal lent colour to the view that it might be malignant.

Looking at the operation book of the Devon and Cornwall Ear and Throat Hospital, I find that during the last three years about sixty-five cases of middle ear suppuration cases have been curetted, and that with the exception of a few cases in which the after treatment has been neglected, they have all done well.

The case I have related shows the importance of the operation, even in suspicious cases, as it is very doubtful if any operation would be successful if cancerous disease had really invaded the bone.

Dr. STCLAIR THOMSON. *Nasal Hydrorrhœa.*

Attention appears to have been first attracted to this subject by Bosworth in 1889 by a chapter devoted to nasal hydrorrhœa in his well-known "Diseases of the Nose and Throat." He therein collected and published eighteen cases, of which he considered the details were sufficiently clear to warrant them being embraced under the heading of "Nasal Hydrorrhœa." A critical examination of these eighteen cases has forced the author to the conclusion that six of them were undoubtedly instances of other morbid affections, and that nine were most probably dependent upon pathological conditions quite unconnected with the nasal mucosa; so that of the original eighteen cases, only three really justify their association under the title of "Nasal Hydrorrhœa." The author has been led to this view by his studies in connection with a case shown before the Laryngological Society of London, where, in an otherwise perfectly healthy subject, cerebro-spinal fluid, with rare intermissions, escaped day and night from one side of the nose. This case—together with the reports by other observers of seven undoubtedly similar cases, and twelve cases which were, most probably, identical—will be found fully recorded in Vol. LXXXII. of the "Medical and Chirurgical Transactions," 1898. It is claimed that of Bosworth's eighteen cases of "nasal hydrorrhœa," no less than thirteen were most probably instances of what should be called "cerebro-spinal rhinorrhœa." In the communication to the "Medical and Chirurgical Transactions" each of these thirteen cases is considered separately.

The writer deals at length with the chemical and clinical signs which distinguish cerebro-spinal fluid from intranasal secretion, and considers the question of the possibility of the hydrorrhœa originating in the accessory sinuses of the nose. Excluding all cases in which the discharge simply traversed the nose on its way from other cavities, and all those in which it is due to direct or reflex irritation, the conclusion is arrived at that what has been regarded as a distinct morbid entity is, in the majority of cases, but a symptom of various affections. Yet it is held that the term of "nasal hydrorrhœa" may still be preserved, if we limit it by defining the affection as one in which there is profuse watery discharge secreted by the nasal mucosa, and not dependent on intranasal or neighbouring sources of irritation. The amount of the fluid may vary from only, what the patient would term, "a slight running" up to as much as a pint in the twenty-four hours. The clinical picture of nasal hydrorrhœa shades off in one direction into cases of what are generally called "hay fever" or "paroxysmal rhinitis," with symptoms of intense local irritation; while in the other direction they may consist of a passive and almost painless watery discharge from the nose.

It appears to be an affection of adult life, affecting males and females indifferently. Although it may be more marked on one side than on the other, the flow usually takes place from both nostrils. When handkerchiefs are soaked with it, they generally dry stiff.

The author's contribution only claims to have advanced the matter one step by distinctly differentiating those cases where the nasal watery

flow is really an escape of cerebro-spinal fluid. The importance of making this differential diagnosis is obvious. When such a character of the fluid is suspected, it is important to avoid any local interference from the risk of infection. In the cases presenting the conditions to which it is proposed to limit the term "nasal hydrorrhœa," the treatment can be only such as we have all tried in cases of hay fever—that is to say, quite empiric, with occasional brilliant results and frequent failures. A plea is entered for moderation in the energy with which so many practitioners use the galvano-cautery. The mucous membrane is easily destroyed; and, while the formation of scar tissue may give a sense of immediate relief, the after results may be worse than the original disease. Careful general treatment—hygienic, dietetic, and climatic—with, possibly, a visit to a suitable spa, will generally secure very satisfactory results.

Dr. FREDERICK E. BATTEN. *On the Pathology of Diphtheritic Paralysis.* A paper based on the examination of six cases of that disease by the Marchi method.¹

The author of this paper has examined the cranial nerves, the spinal cord, the anterior and posterior nerve roots, the posterior root ganglia, the vagi, the phrenics, and some of the nerves to the upper and lower extremities by Marchi's method. He has also examined the spinal cord and the posterior root ganglia by Nissl's method, and the nerves by Pal's method. Of the six cases which he examined five were cases of well-marked diphtheritic paralysis and one was a case of death on the fifteenth day after diphtheria, in which there was not actual paralysis.

The result of the examination is as follows: He finds degeneration of a parenchymatous nature in various cranial nerves in the anterior and posterior nerve roots, and in the nerve fibres as they pass through the white matter to the grey matter of the spinal cord, in the vagus, phrenic and peripheral nerves, and also on both sides of the posterior root ganglia. By Nissl's method he examined the spinal cord and the posterior root ganglia, and the cells in both places were found perfectly normal. By Pal's method no change could be demonstrated.

Of the six cases so examined four gave a positive result, while two gave a negative result, the one being the case above referred to that died on the fifteenth day after infection, the second being a well-marked case of diphtheritic paralysis with hemiplegia due to softening in the lenticular nucleus. In the first case he thinks that sufficient time had not elapsed from the time of infection to allow of changes manifesting themselves in the larger nerve trunks, and in the second case he is unable to give any reason for the negative result.

The paper gives a short digest of the work of various authors on the same subject; he refers to the work of Martin, who has shown that the finer nerve branches of the peripheral nerves are primarily affected, and to the more recent work of Mouravjeff, which tends to show that the primary alteration occurs in the cells of the anterior horn (demonstrated by Nissl's method), the parenchymatous change in the nerves being a secondary and later change; the same had also been shown by Crocq.

¹ From the Pathological Laboratory of the National Hospital, Queen Square, London.

The affection of the posterior roots was first shown by Meyers in 1881, and he found that degeneration existed on both sides of the posterior root ganglia, and this has again been more recently noted by Crocq, Priez, Mouravjeff, and others. Bikeles described the occurrence of fat granules in the posterior roots at their entrance into the cord, the condition described is probably a normal condition commonly present in children, and to a lesser degree in adults. In conclusion, the author regards the dominant lesion in diphtheritic paralysis as a parenchymatous degeneration of the myelin sheath affecting both sensory and motor elements.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.

Friday, July 22nd, 1898.

Dr. DUNDAS GRANT, M.D., F.R.C.S., *President, in the chair.*

OTOLOGY.

The PRESIDENT. (1) *Deep-Seated Cholesteatoma of Petrous Bone with Facial Paralysis. Recovery after Operation.*

(2) *Alcoholic Auditory Neuritis.*

Along with nerve deafness there was pronounced anæsthesia of the feet and fronts of the legs. Great improvement followed administration of strychnia and abstention from alcohol.

Mr. STGEORGE REID. *Pure Cultures of Organisms Separated from the Discharge in Chronic Suppurative Otitis Media.*

Dr. FURNISS POTTER. *Subacute Myringitis Affecting both Membranes.*

A man, aged thirty-seven, a packing-case maker, came to the London Throat Hospital on the 24th of June, 1898, complaining of deafness in both ears and noises in the left ear. He stated that he could hear quite well eight weeks previously. A fortnight before this he had an attack of epistaxis, for which the nose was plugged. He had had no pain or discharge. Bone conduction was increased on both sides; he heard the watch at half an inch on both sides, and both Eustachian tubes were freely patent. On examining the external meati, the appearances were such as to make it doubtful whether the membranes were present or whether it was not a case of complete perforation. The subsequent progress, however, showed them to be intact, but hyperæmic and indrawn. The points of interest in the case were the complete absence of pain and the appearance of the membranes.

Drs. DUNDAS GRANT and PEGLER, and Mr. BARK remarked on the case.

Dr. PERCY JAKINS. *Case of Otitic Cerebellar Abscess successfully treated by Operation.* Shown by Dr. NOURSE.

M. F., aged thirteen, was brought to the Central London Throat, Nose, and Ear Hospital on June 15th in a semi-unconscious condition; head well retracted; pupils equal—no squint; pulse, 64; temperature, 98°; knees drawn up; could be roused to answer questions. There was pus in the left ear; the orifice considerably narrowed by a bulging of the posterior meatal wall. The history given by mother was to the effect that the child had a discharge for two and a half years. Four months after first appearance of discharge an abscess formed behind the ear, which was opened at a general hospital. Three months after this a polypus was removed; the discharge has been very offensive at times. Three days before admission the patient complained of severe frontal and parietal pains, shivering, and drowsiness, and was so bad that she was sent home by her mistress. Two hours after admission pulse was 46°. Chloroform was administered, when the meatal swelling was incised and half an ounce of thick pus let out. At the same time the mastoid antrum was opened and a quantity of cholesteatomatous material removed. The following day there was less retraction, but the general condition was unchanged. The grip of the left hand was much feebler than the right. There was no paralysis. At 6.30 p.m. the cerebellum was explored and an abscess was emptied. The patient made an uninterrupted recovery.

Dr. WOODS (Dublin) referred to the respiratory embarrassment which not unfrequently occurs when operating in these cases. He also cited a case from his own practice, in which, three or four days after operation, when everything was apparently progressing satisfactorily, the breathing suddenly became embarrassed, and the patient died. At the autopsy nothing was found to account for this termination of the case.

Dr. DUNDAS GRANT narrated a case of *Thrombo-Phlebitis of the Sigmoid Sinus, following Chronic Suppuration of the Middle Ear*, in which recovery followed evacuation, without ligature, of the jugular vein.

LARYNGOLOGY AND RHINOLOGY.

Dr. FURNISS POTTER. (1) *Pachydermia Laryngis.*

The patient, a man, aged twenty-six, a clerk, was a teetotaler and a non-smoker, who sought advice at the London Throat Hospital on account of nasal trouble, and whose laryngeal condition was discovered during the routine examination of the throat. On examining the larynx, the right cord presented a thickened swelling in the region of the vocal process, which fitted, on phonation, into a thickened depression on the left cord. He has been under observation for about six months. The condition does not tend to increase, and he practically suffers no inconvenience. The case was considered to be interesting on account of the age, the absence of history of alcoholism, of tobacco smoking, or of excessive use of voice.

(2) *Pharyngo-Mycosis.*

A young man, aged twenty-four, came to the London Throat Hospital, complaining of soreness and dryness of throat. On examination, the

posterior wall of the pharynx, tonsils, and base of the tongue were seen to be studded with small, yellowish-white patches, rather less than the size of a pin's head. A specimen had been microscopically examined by Mr. Waggett, who reported that "there is a certain amount of leptothrix in the specimen, which is made up mainly of shed epithelium; but the presence of the fungus is of no great diagnostic value *qua* pharyngomycosis. From the close knitting of the epithelial scales, it seems very likely that the case is one of keratosis pharyngis, where leptothrix is more often present than not."

Dr. DUNDAS GRANT thought the patches had not the hardness or acumination found in keratosis pharyngis. He considered the case to be pharyngomycosis.

(3) *Post-Diphtheritic (?) Paresis of Right Half of Soft Palate and Abductor of Right Vocal Cord.*

J. F., a man, aged forty, came to the London Throat Hospital complaining of hoarseness and discomfort in the throat. He stated that he had a sore throat in January last, from which he dated the commencement of his trouble. He had influenza in the following March. No history of syphilis. On examination the soft palate was found to be paretic on the right side; on phonation the vocal cords did not completely approximate; and on deep inspiration the right cord was seen to lag and to be incompletely abducted as compared with the left. The knee jerks were normal. He had been taking strychnia, and the condition had considerably improved, but the paresis was still distinctly visible.

Dr. DUNDAS GRANT thought the action of pushing the tongue into the left cheek was weaker than the same movement directed to the right cheek, and was inclined to think it probable that the nuclei in the medulla (spinal accessory and hypoglossal) were implicated.

Dr. FURNISS POTTER said that even granting the weakness of the tongue it would not negative the idea of the case being one of neuritis.

Dr. GEORGE STOKER. *Case of Lupus and Rodent Ulcer* treated with inoculations of staphylococcus pyogenes aureus, previously exposed to the action of oxygen, by which Dr. Stoker thought an antitoxin was produced.

Mr. STGEORGE REID asked Dr. Stoker which he considered had the beneficial action on the diseased tissue; the oxygen, or the application of the staphylococcus aureus? and what advantage there was on treating the staphylococcus with oxygen before applying it?

Dr. DUNDAS GRANT. (1) *Case of Rhinoscleroma* in a native of Russia.

(2) *Case of Pseudo-Phthisis, due to Nasal Polypi and Ethmoiditis.* Sent by Dr. DAVISON, of Bournemouth, for treatment of the nose.

Mr. STGEORGE REID. A culture tube and microscopic specimen of the capsuled bacillus of *Rhinoscleroma* obtained from Dr. Grant's case. The apparent similarity to Friedlander's bacillus was referred to, and some points of interest in its culture and staining were explained.

MR. WYATT WINGRAVE. *Case of Laryngeal Growth and Microscopic Section (Fibro-Myxoma).*

C. H., a man, aged thirty-five, complained only of hoarseness and irritable cough for the last three years. On laryngoscopic examination a translucent growth, the size of a red currant, was seen growing from the upper surface of the right vocal cord in its anterior third, the rest of the larynx being normal. His occupation, that of a clerk, was trying to his voice, since it necessitated much shouting and dictating in a loud voice, surrounded by a very dusty atmosphere.

About three weeks ago the growth was removed by means of the President's forceps, having a small pedicle, since when it has returned, and now appears as a small polypoid mass, which will be further removed.

Microscopic Features.

The sections show spindle and round cells embedded in an abundant matrix of mucin, with but few blood vessels, whilst the surface is covered with stratified squamous epithelium. This element shows such undoubted indications of activity in two places, that although the neoplasm is simply a fibro-myxoma, it must be looked upon with a certain amount of suspicion.

Mr. BARK (Liverpool) thought that this was probably a soft fibroma, but the rapidity of growth after partial removal, and the active epithelial proliferation seen in the section, made it somewhat suspicious.

DR. PEGLER. (1) *Case of Partial Infiltration of Vocal Cords, with Pedunculated Commissural Growths for Diagnosis.*

Mr. BARK (Liverpool) thought it was a case of ordinary papillomata in the anterior commissure, and suggested the snare for its removal.

DR. MIDDLEMAS HUNT (Liverpool) suggested removal with Schrötter's forceps.

(2) *Bilateral Erectile Tumours of the Septum Associated with Ethmoidal Disease and Polyphi.*

Mr. WYATT WINGRAVE considered that the section presented all the features occurring in the normal mucous membrane of the region, and might well be considered an exaggerated "soft tubercle" or crest.

The masses of lymphoid tissue did not conform to the character of a tonsil, since there was no lymph path, and no surrounding lymph "pulp." He interpreted the masses as being simply the normal lymphoid tissue of the part arranged as cylinders, grouped for the most part horizontally with the surface.

DR. MIDDLEMAS HUNT (Liverpool). (1) *A Case illustrating the Effects on Growth and Development of Removing Nasal Obstruction.*

J. K., aged seventeen, came under my care in October of last year, on account of nasal obstruction of six years' duration. She was a thin, anæmic girl, with a flat chest, round shoulders, and the stupid aspect which characterizes mouth-breathers.

On examination I found the right nostril completely blocked by a large, dense polypus, while the naso-pharynx was filled by what looked

like several similar growths, one of which projected below the soft palate. I tried to remove a portion of the growth in the right nostril, but found it so tough that I broke my Jarvis's snare in the attempt. I therefore had the patient put under chloroform, and removed the growth in three or four parts with a tongue écraseur. I then found that the growth was single though divided into lobules, and that it had a narrow pedicle attached to the middle turbinal, about half-way between its anterior and posterior extremities.

Some days after the operation I took the height and weight of the patient, and found she was five feet two and a-half inches in height, and weighed six stones twelve pounds. She returned to see me in May of this year—seven months afterwards—looking a fine, healthy young woman. Her height was then five feet six inches, and she weighed nine stone ten and a-half pounds. That is, in seven months she had grown three and a-half inches, and gained almost three stones in weight.

She told me that before the operation she had had a good appetite, except for breakfast, but that for three months after the operation she was always hungry and never felt satisfied.

The growth, which weighed seven hundred and twenty grains, was a simple mucous polypus.

(2) A Case in which *Thyrotomy had been performed for Malignant Disease* in a man over eighty years of age.

J. B., aged eighty, was sent to me in September of last year, on account of loss of voice of three or four months' duration. He gave a history of having had an attack of influenza in the end of December, 1896, which was followed by increasing hoarseness, ending in complete aphonia.

On laryngoscopic examination the anterior part of the glottis was seen to be filled with a mass of pale, pinkish-white growth, which had begun to break down and ulcerate on its surface. It appeared to grow from the upper surface of the left vocal cord at its anterior end, and to invade the ventricular band above. The cord was distinctly congested, but seemed to move freely, though somewhat hampered by the growth.

I formed the opinion that the growth was malignant on the following grounds: (1) The age of the patient; (2) the fact that the growth was ulcerated on its surface, and that it appeared to invade the cord and ventricular band; (3) the history of the comparatively rapid progress of the symptoms—from slight hoarseness to complete aphonia within four months.

In view of the situation and extent of the growth, I thought the case a suitable one for thyrotomy, and the patient willingly consented to submit to operation.

Though his general health was excellent, I thought it advisable, in view of his great age, to divide the operation into two stages. I therefore, on October 3rd, did a preliminary tracheotomy, and five days later I performed thyrotomy, and removed the growths and surrounding soft parts. I did not employ a tampon canula, but plugged the trachea with a sponge before commencing the operation. The after treatment was on

the lines laid down by Butlin and Semon, except that I did not remove the tracheotomy tubes for twenty-four hours after the operation.

The patient did so well that he was able to get up at the end of a week. On the tenth day after operation, however, he developed a pneumonia at the right base and had to be put back to bed again. Though this of course protracted his recovery, he was able to leave hospital and return home to the Isle of Man four weeks from the date of operation.

Unfortunately, I have had no opportunity of examining the case since, but he wrote me a month ago that his voice was improving, and that though he had kept indoors most of the winter and early spring, he was now getting about again.

Microscopic examination showed the growth to be an epithelioma.

BELGIAN OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

June 19th, 1898.

Specially Reported by Dr. RUYS for the JOURNAL OF LARYNGOLOGY.

(Translated by Mr. MCLEOD YEARSLEY.)

MORNING MEETING.—EXHIBITION OF PATIENTS.

M. BAYER and M. DELSAUX showed cases of cure of *Laryngeal Tuberculosis* by treatment *per vias naturales*. M. Bayer touched the parts curetted with parachlorphenol glycerine; whilst M. Delsaux uses lactic acid in solutions of increasing strength.

M. BAYER showed a case of *Congenital Membranous Diaphragm of the Naso-Pharynx* in a young girl, aged sixteen years. A circular membrane existed behind and above the soft palate, binding below the inferior lips of the Eustachian tubes, and ascending to the vault of the pharynx to be inserted to the right of the pharyngeal tonsil, leaving in the middle a large aperture communicating with the nasal fossæ.

M. DELSTANCHE, jun., showed a cured case of *Subdural Abscess*, following purulent otitis media. He had performed antrectomy on a child with mastoiditis, and presenting serious meningeal symptoms, complicated with unilateral paralysis; but, although the antrum was freely opened and the posterior wall of the meatus completely removed, no fistulous tract was visible. The dura mater was laid bare, but appeared normal. The next day, the patient's condition being worse, the operator punctured the dura mater in the centre with a syringe, which drew off foetid yellow pus. A large T-shaped incision was then made, and about a litre of pus evacuated. The pus contained streptococci. Recovery was rapid and complete.

M. HENNEBERT (Brussels) showed a patient suffering from *Caries of the Temporal Bone*, which had necessitated two successive operations,

comprising antrectomy, laying bare the meninges, the removal of the posterior meatal wall and the wall of the attic. Now the general condition of the patient is more satisfactory; but, in spite of various topical applications and treatments, no appreciable change had taken place in the level of the sight of operation, which formed a large and deep cavity behind the auricle, without any tendency to cicatrization. The bone is bare, there are no granulations, and suppuration is very little.

M. HICQUET (Brussels) showed a child, aged four years, suffering with *Paralysis of the Arm, following Extensive Caries of the Temporal Bone*. This child had an operation on the left mastoid in December last, but the seat of operation continued to show signs of necrosis about the upper part and at the bottom, and he became the subject in April of aphasia and paralysis of the right arm. These troubles persisted, despite fresh intervention, which resulted in the removal of several sequestra and the laying bare of the dura mater.

The extraordinary depth of the retro-auricular cavity was to be noted; it probably extended as far as the carotid. A fixed sequestrum existed at this level.

M. HICQUET showed a child, aged five and a half years, in whom he had extirpated a *Fibro-Myxomatous Polypus from the Left Nasal Fossa*. The development of this tumour was such that it projected behind the soft palate. M. Hicquet had removed the polypus by introducing the finger into the naso-pharynx.

M. HICQUET also showed a *Woman suffering from a Form of Pharyngeal Tuberculosis, simulating True Lupus*. Treatment consisted in applications of pyoktannin. M. Buys had treated a case with the antitubercular serum of Maragliano. The local result had been absolutely *nil*, but the patient had benefited by a considerable and rapid gain in weight.

EXHIBITION OF ANATOMICAL SPECIMENS AND INSTRUMENTS.

M. BUYS (Brussels). *Specimens of Caries of the Petrous Bone and Meningo-Encephalic Suppuration*. The specimens shown were from a child of nine years who had succumbed to a purulent meningitis, following caries of the petrous bone. The interest lay in the unilateral nature of the cerebral lesions and in the great extent of the necrosis. All the right hemisphere—that is to say, that corresponding to the affected bone—showed suppurative meningitis, which had given rise to a number of abscesses, situated at the bottom of the sulci which separate the convolutions, and even in the cerebral substance itself.

The petrous bone was affected by caries and necrosis close to the summit; the existence of signs of necrosis could be proved in the carotid canal itself. There was no trace of sinus phlebitis. The dura mater was intact. The infection was due to streptococci. Several days before death the patient had attacks of Jacksonian epilepsy on the side opposite to the affected hemisphere.

MM. BUYS and LABARRE (Brussels). *Specimens and Histological Specimens of a Case of Cystic Degeneration of the Tonsil.*

M. DELIE (Ypres) showed a *New Instrument for Curetting the Attic.* These were four fenestrated scrapers and two knives, whose forms and dimensions were calculated for the exploration of all parts of the cavity in question.

M. DELSAUX (Brussels). *A Foreign Body which had remained Six Months in the Subglottic Space.* This was a triangular splinter of bone, measuring twenty-six millimètres long by twenty-two millimètres broad, and one and a half millimètres thick. The anterior angle, very pointed, was inserted in the anterior wall of the subglottic space towards the points of union of the vocal cords. Its removal was effected with the help of Schmidt's forceps.

M. DELSTANCHE (Brussels). *New Treatment of Nasal Stenosis.* M. Delstanche showed an instrument designed to correct nasal stenosis due to excessive contiguity of the lateral walls (congenital or due to the presence of tumours). It was a forceps which was introduced closed into the nasal fosse to the narrow point, then opened roughly in order to crush, and, if possible, break the inferior turbinal against the external wall.

M. HUIQUET made several remarks as to the progress of a case of *Epithelioma of the Septum* in a child of nine years. This lesion, proved by the microscopical specimens of Rousseau, showed itself in a subject marked by lupus of the cheek.

M. ZAALBERG (Amsterdam) showed a *Model of a Hook for holding apart the Lips of the Wound in Operations on the Mastoid.* The hook is maintained in place by a rubber tube surrounding the head of the patient.

AFTERNOON MEETING.

Ear Manifestations in Hysteria, by MM. BOLAND AND COOSEMANS.

M. BOLAND (Verviers) resumed his report nearly in the following terms :—

Etiology. Traumatisms were frequently found as causes of hysterical deafness, especially in men more subject to traumatic nerve disorders in other respects.

Diagnosis is not always easy if the auditory troubles are not accompanied by other symptoms making the existence of hysteria probable. Cases of Ménière's disease are certainly connected with epilepsy related to hysteria.

Treatment should be psychical. The imagination should be aroused by putting in action various forms of electricity, metallo-therapy, etc. The action of direct suggestion should be practised.

M. COOSEMANS (Brussels). The *etiology* corresponds with that of nervous disorders, and the auditory localization is explained by the existence of a general alteration of the sensibility on the same side of

the body, by the co-existence of organic lesions of the organ of hearing, and by the same nature of the pathogenic agent (loud noises), or by the locality of its action, auricular and periauricular traumatism.

Finally, certain general infective diseases—typhoid fever, pneumonia, syphilis, influenza—and certain poisons, are sometimes responsible for auditory symptoms of an hysterical nature. The authors are not certain of the frequency of these manifestations.

Symptomatology. The hysterical manifestations in the ear present four principal groups (Gradenigo). I. Modifications of the sensibility of the meatus, tympanum, and vestibule. II. Otalgias. III. Hysterogenetic zones. IV. Hæmorrhage from the ear.

The *Diagnosis* was established by the general examination of the subject, especially by the search for the stigmata of hysteria, and if these were absent, by the examination of the pathogenic cause, its mode of action, the degree of auditory disturbance, its connection or not with the organic lesions in the ear, the result of psychical treatment, and the characters of the anæsthesia present.

A discussion followed, in the course of which

M. ROUSSEAU said the difficulty of diagnosis in certain cases was the danger that might occur in judging as hysterical auditory trouble following on traumatism. The authors recognized this difficulty, but had remarked that, in certain cases, the traumatic origin was undoubted.

M. ROLAND recalled a case where traumatism—perhaps psychical—which was not evident in this case, might have explained the production of an organic lesion.

M. BAYER did not accept the diagnosis of hysteria in these cases, or that it was established that the subject was hysterical.

MM. GORIS and JAUQUET. *The Surgical Treatment of Ethmoidal Sinusitis.*

M. GORIS. Suppurative ethmoidal sinusitis essentially requires surgical treatment. The ethmoidal cells are in intimate connection with the other nasal accessory cavities, the frontal, maxillary, and sphenoidal sinuses. Also it is necessary to be sure that the ethmoidal cells alone are affected, and not in conjunction with the other sinuses of the face. This question of diagnosis has been cleared up by Schmidt, Moure, and Lermeyer; and the authors only wish to recall the principal points.

The causes assigned to empyema of the ethmoidal cells are, in general, polypi, various sinusites, and, above all, the tentative operations done in the middle meatus. It is necessary to add syphilis as an important factor.

The method of intervention depends upon the region occupied by the lesions. If these be seated in the anterior part of the ethmoid, or a localized lesion has been revealed (caries, a sequestrum), the galvanocautery, forceps, and curettes will be sufficient to bring about a cure. If, on the contrary, the cells are altogether affected, if fistulæ are produced in the side of the orbit, a considerable interference is indicated—not merely for a more rapid cure, but as being a less dangerous proceeding than cauterization, which is dangerous to employ in this region, so close to the orbit and the brain.

M. JAUQUET (Brussels). Medical treatment, applicable to acute sinusitis, might be considered as delusive in undoubtedly chronic ethmoiditis. One could only hope for a radical cure from surgical treatment.

Ethmoiditis being generally consecutive to a nasal affection (polypus, tumours, various inflammatory affections), surgical or medical treatment should be directed to the cause. All surgical procedures attacking the ethmoid cells themselves should be directed to opening freely the affected cavities, and giving drainage to the products resulting from the sinusitis. The operations were practised by the natural passage or by artificial ones (orbits or face). Despite the energy and relative perfection of the operations, some sinusites remain obstinate. When success is small, it may be ascribed to our defective knowledge of the essential nature of these sinusites and to missing the original cause.

A discussion was occupied in the relative value of operative procedures by extra- and intra-nasal methods. Speakers were agreed in admitting that interference by the artificial passages of the face and orbit should only be employed in cases where the natural passage of the nose was insufficient.

M. JAUQUET said that, if operations by the nose were often difficult, it was not correct that they were very dangerous. Perforation of the orbital plate did not give rise to any grave complications, and perhaps that of the cribiform plate was not always followed by infection of the intracranial region. The operation should be done aseptically.

M. GORIS said that the aseptic operation is not to be realized in the case of ethmoid infection. He objected to the nasal passage as not permitting the operator to see clearly.

M. BUYS cited an operation which the authors had not mentioned—that which Winckler and Jansen employed with great advantage, and which consisted in getting at the ethmoid cells by way of the antrum of Highmore, after freely opening that cavity through the canine fossa. This method allowed Winckler afterwards to thoroughly control and curette the region in all its parts.

M. BUYS related a case of *Herpetic Eruption on the Lobule and Antitragus* preceded by true meningitic nervous symptoms. There was, indeed, intense headache, rigidity of the neck, frequent vomiting (nearly forty times in twenty-four hours), photophobia, constipation, slow and irregular pulse. Fever alone was wanting. Pain was chiefly on the side of the ear which exhibited the herpetic eruption. The eruption coincided with the rapid disappearance of the general symptoms. M. Buys thought it a herpes zoster of the auricular branch of the cervical plexus.

M. DELSAUX. *Abscess of the Vestibule of the Larynx opened by a Guarded Bistoury; Recovery.* A man, sixty-two years old, suffered for four days with lancinating pains in the right side of the neck. He experienced dyspnoea and dysphagia. The laryngoscope showed on the right lateral wall of the pharynx an elongated swelling as large as a nut; the right vocal cord was hidden by the œdema. The temperature oscillated between 38° and 39° (Centigrade). M. Delsaux opened it in

the centre by an incision with a guarded bistoury, and recovery was rapid.

M. DELIE (Yprés). *Remarks on Adenoid Vegetations in Adults.* He never neglected to examine the naso-pharynx in adults of an adenoid type. Often traces of vegetations could be found, the incomplete atrophy of which was capable of causing pathological symptoms, local or general reflexes.

Adenoid vegetations, much developed in the adult, ought to inspire a salutary distrust. They might contain in their stroma elements of a suspicious nature, and which might suddenly undergo a malignant degeneration.

It was necessary to operate without delay and as completely as possible. Hæmorrhage is not so profuse as is believed.

M. DELSTANCHE had seen two cases of adenoids in adults. They did not present any malignant character.

M. JAUQUET had removed a very large mass of adenoids from a woman of forty-five to fifty years. There was no recurrence.

M. ROUSSEAU had often met in adults, with a form of infection of the retro-nasal space, inflammation of Luschka's tonsil, which he treats with great success by electric curettage.

MM. DELSTANCHE and DELSAUX. *A Case of Pseudo-Rhinolith.*

MM. Delstanche and Delsaux showed an osteoma extracted from the nasal fossa of a man, aged sixty-six. The case is interesting because of an error of diagnosis. The patient was shown originally by M. Delstanche at a congress of otology as an undoubted case of rhinolith. The tumour shown was irregularly bossed, very hard, nearly as large as a walnut. Its extraction was very difficult.

MM. HENNEBERT and ROUSSEAU. *Otitic Pyæmia with Lateral Sinus and Jugular Phlebitis; Recovery without Operative Interference.*

MM. Hennebert and Rousseau related the case of a young man, aged twenty-two years, of hæmophylic and rheumatic antecedents, who, in the course of an acute otitis, manifested grave general symptoms, leaving the diagnosis doubtful for several days. A fortnight after the onset of the illness, the appearance of prolonged rigors, the temperature oscillating from 40° to 37° (Centigrade), the existence of dysphagia, rigidity of the neck, vomiting, severe circumscribed headache, and the profound debility of the patient suggested the diagnosis of pyæmia with phlebitis of the lateral sinus; the later appearance of a hard and tender cord along the situation of the jugular vein and metastatic manifestations in several joints confirming the view.

M. LAMBARD (Paris). *The Employment of the Bur and Electric-Motor in Operations on the Mastoid and Petrous Bone.*

M. Lambard considered that the bur presents over the gouge the following advantages:—1. Greater precision. 2. Less risk of wounding the facial nerve, semi-circular canals, etc. 3. Prevention of the results of the blows of the mallet. 4. Gain in the rapidity of the operation.

5. The hollowing out is regular, and contains no angles or rugosities.
6. If the mastoid is sclerosed, as is far from rare in old otorrhœas, the work is easier.

M. NOQUET (Lille). *A Case of Rupture of the Membrana Tympani by an Explosion.*

The patient had never suffered from his ears. He was firing at some pigeons, when the left barrel of his gun burst, causing a very loud explosion. By a lucky accident his left hand was spared, but a rupture of the left membrane was caused, with a vertiginous sensation of short duration, facial pallor, subjective noises, and hæmorrhage from the meatus. The left ear became immediately deaf.

M. Noquet found a very marked diminution in the hearing, but the tuning fork was a little better perceived by the left ear. The rupture, buttonhole-shaped, was situated in the posterior segment of the membrane. After five weeks of treatment by syringing, followed by antiseptic instillations, the rupture cicatrized, and the hearing returned to nearly normal. Now, some months after the accident, the hearing is perfect.

ABSTRACTS.

NOSE, &c.

Ardénne.—*A Case of Chronic Abscess of the Naso-Pharyngeal Vault.* "Rev. Hebdomadaire de Lar.," Feb. 12, 1898.

THE case reported is that of a man of fifty-nine, who, for about twelve months had complained of nasal obstruction and the various symptoms dependent on mouth-breathing. Pain had never been experienced. The history gave no information of value. The urine contained small quantities of sugar and albumen.

On examination the post-nasal space was found to be occupied by a smooth, red, globular mass, attached by a broad base to the vault and of the size of a walnut. This proved to be filled with yellow, non-fœtid pus, which escaped on the accidental rupture of the abscess wall during digital examination. Careful palpation failed to discover any bare bone, and evidence of Pott's disease was absent. After free opening and swabbing with zinc chloride, the state of parts speedily returned to the normal. Microscopic examination of the tissue failed to reveal evidence of tuberculosis or of the presence of a definite cyst wall. *Waggett.*

Brindel.—*Sinusitis and Broncho-Pneumonic Complications.* "Rev. Hebdomadaire de Lar.," Feb. 5, 1898.

THIS paper deals with the secondary complications due to pus infection of the air passages from suppurative disease of the nasal accessory cavities. Illustrative cases are given in which successive attacks of pulmonary trouble were proved to be due to such causes. The writer, however, adds the caution that, where disease of a sinus is co-existent with pulmonary disease, a causal relationship is not invariably present; and he cites a case in which tubercular disease of the lung was accompanied

by simple empyema of the maxillary antrum. Nevertheless, in such a case the cure of a suppurative centre is decidedly indicated as a preventative against infection by strepto- or staphylococci of a tubercular lesion of the lower air passages. *Waggett.*

Hecht, Hugo.—*On Ozæna.* "Münchener Med. Woch.," 1898, No. 7.

HE reports two cases of ozæna treated with electrolysis. Both received six applications, lasting for ten minutes, of from twenty-five to thirty milliamperes. Treatment lasted for two months, and, in addition, the nasal douche was used thrice daily. The first case showed transient improvement. Some time after it was in *statu quo*. In the second case, where he describes the anterior part of the nose as almost normal, there was improvement two months after treatment was finished. The fœtor had subsided, but there was still semifluid greenish secretion present, which was in parts dried into crusts, and could be removed with forceps. He ascribes the want of improvement in the first case to the irreparable atrophy of the mucous membrane. He considers the two cases to support the tropho-neurotic theory of Rethi from a clinical therapeutic basis, and to be against a bacterial origin for ozæna. *Guild.*

Lieven, Anton.—*The Aix-la-Chapelle Treatment of Syphilis of the Nose and Throat.* "Laryngoscope," May, 1898.

THE author remarks:—

1. That, not only iodine, but also mercury is indicated in tertiary syphilis of the upper respiratory tract.

2. That inunction is the best method for exhibiting the action of mercury.

His experience is that the shorter the period between the primary infection and the tertiary manifestations the more efficacious the action of the mercurial therapy; and also that nasal syphilitic gummata are more often observed from one to three years after the primary infection; and that tertiary manifestations in the upper respiratory tract are not always so late of appearing as is usually supposed.

The author regards inunction as the best method of exhibiting mercury in these cases, and describes fully the method of administration as followed out at Aix, with directions as to diet, clothing, exercise, etc. *W. Milligan.*

Mackenzie, G. H.—*A Case of Malignant Polypus of the Nose; with Remarks.* "Brit. Med. Journ.," July 9, 1898.

IN this case the patient—a lady, aged sixty—came under the author's care suffering from nasal obstruction. The symptom which had first drawn attention to something being wrong was an attack of left-sided nasal hemorrhage of a somewhat profuse nature. Upon examination many polypi were found in both nostrils. In the right nostril they presented the appearances of ordinary mucous polypi; but in the left they had a dark brown or slaty-grey colour, and, upon probing, bled freely. No pain was present, and no glandular enlargement. As any radical interference was refused, treatment simply consisted in removing the more projecting portions of the growths.

At first microscopic examination of portions removed showed the ordinary appearance of mucous polypi; but on the third occasion, when sections were made, pure sarcomatous tissue was found. The growth was, in fact, a round-celled sarcoma of great vascularity and rapid growth, in which frequent and repeated hæmorrhage had taken place, and in and around which low forms of septic inflammatory changes had arisen.

The author remarks that the results of the various microscopic examinations, made at intervals of about one month, go to show that the polypi in the left nostril were originally benign, and that sarcomatous invasion or degeneration was of

comparatively recent occurrence. The question of how far traumatism (surgical) can be held responsible for inducing malignancy in ordinary mucous polypi is discussed. Early diagnosis of the nature of the growth is insisted upon, and two features of special value in diagnosis are commented upon—viz., hæmorrhage and the locality of the growth. The former appears to be the most important of all symptoms, and is usually an early symptom, severe and recurrent.

Attachment of the growth to the septum appears to be a distinctly suspicious sign, and is regarded by some authors as a sure indication of malignancy.

Cases of nasal sarcomata may occur at any age, although usually found in people over forty years old.

W. Milligan.

Richards, G. L.—*On the Use of Formaldehyde in Atrophic Rhinitis.* "Laryngoscope," May, 1898.

THE writer uses formaldehyde as follows:—After removal of all crusts and débris with a weak alkaline solution, by means of a syringe and cotton applicators, both nostrils are well washed out with a solution of formaldehyde containing about five to ten drops of the forty per cent. solution to eight ounces of warm water. On account of its irritating properties, it is well to previously spray the passages with cocaine solution.

It is claimed that under its use crusts diminish in number and all unpleasant odour ceases.

W. Milligan.

Schech, Prof. (Munich).—*Caries of the Sphenoid.* "Münchener Med. Woch.," No. 27, 1898.

WHILE chronic suppurative catarrh of the sphenoidal sinus—vulgo empyæma—frequently runs a latent course or is accompanied with headache, giddiness, or a purulent discharge, empyæma combined with diffuse bone disease usually causes severe, dangerous, or fatal results. Owing to its proximity to important osseous fissures, blindness, ocular paralysis, erosion of the carotid or other vessels, thrombosis, meningitis, sub-dural or brain abscess may be caused. Extensive caries of the sphenoid is usually due to some dyscrasia, e.g., syphilis, malignant growth. He has seen three cases.

I. Woman, twenty-eight, complained of headache and nasal obstruction. A tumour was found growing from the lower anterior wall of the sphenoidal sinus, and filling the naso-pharynx; it was removed. Microscopically it was benign. Suspicious, however, of serious disease was paralysis of the motor oculi and abducens, while the opticus was intact. As there was purulent discharge from the sinus it was washed out. This was followed by unconsciousness, rigor, fever, and excessive polyuria with a large amount of sugar. The sugar disappeared after a few days. After four weeks, ptosis of the left eye, and diminution of the visual field occurred, headache increased, with a blood-tinged foetid discharge from the nose. Two months later there was total blindness; opening into the sinus was enlarged from the nose. Antispecific treatment had no effect, so the diagnosis of a malignant growth was made. *Post mortem* showed a gliosarcoma.

II. The second and third cases were syphilitic. Both had purulent discharge from the sphenoidal sinus, with bare bone on the posterior superior part of the septum and around the opening of the sphenoidal sinus. Treatment was anti-specific and locally regular cleansing of the nasal fossæ, introduction of a probe coated with hexamethylviolet into the sphenoidal sinus and insufflation of iodo on the carious spots. In spite of treatment the disease lasted for months. One of the patients suffered from an apoplectic attack, with unilateral paralysis of tongue, face, as well as great weakness of the arms and legs. This disappeared in a few months with inunctions of mercury and iodide internally. The other

case suffered early from headaches, and, later, from tingling and formication in the arms and finger tips, as well as attacks of vomiting and unconsciousness. Recovery also followed in this case.

Schetch points out that in such cases severe injury may be easily done by local measures; in the first case the symptoms produced were those of puncture of the diabetic area of the medulla. One cannot know whether there is a hole in the bone, and communication with the interior of the skull, or adhesions which may be broken down by a probe or syringing, causing fatal results. *Guild.*

Todd, C.—*A Form of External Rhinitis due to the Klebs-Loeffler Bacillus appearing in Children Convalescent from Scarlet Fever.* "Lancet," May 28, 1898. (The author applies the term "external" to what is more generally known as "anterior" or "vestibular" rhinitis.—*Rep.*)

CHILDREN in hospital during their convalescence from scarlet fever are peculiarly liable to a certain form of external rhinitis.

Clinical history.—The first sign of anything abnormal is a slight redness of the posterior margin of one or both nostrils, usually beginning at the inner or outer angle and at the muco-cutaneous junction. The redness becomes more intense, and ultimately a moist granular-looking raw surface results; this surface bleeds easily, and is often covered by a crust which may almost, or completely, block up the nostril. This is more commonly the case in younger children who scratch their nostrils and so cause bleeding. There is never any formation of membrane and the process does not appear to extend backwards into the nasal cavity, but in many cases it spreads down to the upper lip in the form of an eczematous area apparently caused by the infective discharge. This discharge is usually slight and not uncommonly absent. The nostrils remain in this granular condition for a variable time—from one to four or five weeks—and then gradually resume their normal condition. During the course of this rhinitis there is a tendency to the formation of pustules on parts of the body exposed to contact with the discharge. In many cases the face has a "spotty" appearance due to the presence of several minute pustules, and at times larger pustules are seen, more especially on the hands, and apparently originating in some scratch or other slight lesion or at the edges of the nails. The rhinitis does not appear to have any effect upon the general health, and is unaccompanied by any rise of temperature. There is no albuminuria or marked glandular swelling coincident with the rhinitis; but as the children are convalescent from scarlet fever the submaxillary glands in many cases are enlarged, and it is difficult to say how much may be due to the rhinitis. In no case have any paralytic symptoms been observed in the fifty-one cases recorded, though these have been carefully looked for. This form of rhinitis appears to be contagious, and spreads, though not rapidly, among young children when introduced into a convalescent ward where the children are playing together and so coming into close contact.

Children are most commonly affected about the age of three or four. No case occurred after the age of twelve years. Fifty-one cases occurred amongst three hundred and sixty-five children affected with scarlatina—almost fifteen per cent; it is, therefore, not a rare occurrence. The bacillus isolated was found to be morphologically indistinguishable from the Klebs-Loeffler bacillus of diphtheria. The cultures were virulent for guinea-pigs. The children affected with rhinitis had not been exposed to any extent to infection from cases of diphtheria while in hospital. On the other hand, although there occurred fifty-one cases of rhinitis, accompanied by a bacillus indistinguishable from the true diphtheria bacillus, only one case of diphtheria occurred.

Recapitulation and Remarks.—(1) Children convalescent from scarlet fever in hospital are very liable to a certain form of external rhinitis, often accompanied by the formation of secondary pustules on various parts of the body. (2) This rhinitis, though not membranous, is associated with the presence of the Klebs-Loeffler bacillus in the nostrils, this organism being absent from the fauces. (3) It is contagious as such, but has not been observed to give rise to faucial or laryngeal diphtheria. (4) It is unaccompanied by rise of temperature, albuminuria, or marked glandular enlargement. (5) It appears to be limited to children under thirteen years of age, and has been most frequently observed at the ages of three and four years. The fact that the bacillus, though present in the nostrils in large numbers and causing a local lesion, does not give rise to any constitutional symptoms, or to faucial or laryngeal diphtheria, suggests that its virulence is modified to a remarkable extent. It is virulent to guinea-pigs, when inoculated subcutaneously; but this is no criterion of its virulence to the human being, as was shown by Dr. Klein in the case of diphtheria bacilli taken from the fauces of patients suffering from diphtheria. Why the bacillus limits itself to the nostrils and does not invade the tonsils is very hard to see, as the tonsils must be liable to repeated infection, both from the nasal passages direct and through the mouth. It appears not improbable that, under certain conditions, this feebly virulent bacillus may acquire a higher degree of virulence; and this point possesses a peculiar interest in view of the large number of cases of diphtheria met with after scarlet fever.

Remarks by Prof. KANTHACK.—As Dr. Todd read the above paper during an Act for the M.D. degree, I allow myself the privilege of adding a few critical remarks which, in substance, were offered at the time, and which are intended to fill some gaps in a valuable piece of work. It is important in connection with Dr. Todd's paper to allude to the observations of Dr. Cautley, who examined the nasal secretion of persons suffering from acute febrile nasal and naso-pharyngeal catarrh and found the bacillus coryzæ segmentosus, an organism which, morphologically and on artificial cultivation, is certainly allied to the diphtheria bacillus. Unfortunately, Dr. Cautley did not perform animal experiments or attempt any chemical tests. Certainly his organism was not a "Hofmann's bacillus," nor was it a typical diphtheria bacillus. Next, mention must be made of the numerous cases of fibrinous rhinitis in which diphtheria bacilli, or organisms indistinguishable from diphtheria bacilli, have been found. It must suffice to allude to the published works of Abbott, Freeman, Czernetschka, Concetti, Stamm, Meyer, Gerber and Podack, and Pluder. Rhinitis fibrinosa is a chronic affection, which, as a rule, remains local, and does not give rise to a clinically recognized diphtheria; but the bacillus occurring in this lesion is now generally acknowledged to be the Klebs-Loeffler bacillus. Further, bacilli resembling diphtheria bacilli, but not Hofmann's bacilli, are found with great frequency in many forms of ulceration of the skin, gangrene, stomatitis, cancrum oris, and noma. Together with Mr. J. W. W. Stephens, I have examined systematically a number of such cases, and have separated in all cases of cancrum oris and noma an organism so closely resembling Loeffler's bacillus that, although in most cases it was not virulent, I have not hesitated to place it provisionally with the diphtheria bacillus. Recently Freymuth and Petruschky have reported that, in cases of noma, they have obtained the diphtheria bacillus. I hope soon to find the necessary leisure to publish my own researches, but wish here to point out that, in many forms of chronic and impetiginous ulceration of the skin, it is easy to find bacilli resembling the diphtheria bacillus in all respects excepting virulence—so closely that I see no reason to separate them as pseudo forms, all the more since they all differ strikingly from Hofmann's bacillus, and since competent observers now begin to recognize that acid

formation, metachromatism, Neisser's staining reaction, appearances on gelatine and agar-agar, and virulence, are no more certain criteria for the diphtheria bacillus than appearances on gelatine, indol reaction, and virulence are certain criteria for the cholera vibrio. I have maintained for some time that bacilli actually, and not merely distantly, resembling the diphtheria bacillus, are found frequently in the throat and elsewhere in chronic ulceration, impetigo, cancrum oris, etc., and that in many cases, by continued growth, these bacilli may be so altered as to resemble the diphtheria bacillus still more closely, and even to acquire pathogenic properties. The diphtheria bacillus is, in my opinion, widely distributed—frequently in modified forms, it is true—but still in such forms which, except by artificial and imaginary criteria, such as would not be recognized in the case of other micro-organisms, cannot be separated from the Klebs-Loeffler bacillus, which, even under the best conditions, is a highly polymorphic organism. I therefore consider the work of Dr. Todd of all the greater importance, since it is a further contribution to the view, which is gradually gaining ground, that the diphtheria bacillus is found in many lesions which are not "diphtheria," and that the various tests, generally enumerated, do not suffice to distinguish the various modifications from the "text-book variety" of the Klebs-Loeffler bacillus. It is unnecessary to draw attention to the bearing which such a view has upon the etiology and pathology of diphtheria.

StClair Thomson.

LARYNX, &C.

Barnet, L. E. (Dunedin).—*Removal of a Foreign Body from the Left Bronchus of a Child.*¹ "Australasian Med. Gazette," June 20, 1898.

REPORT of a case of impaction of a portion of the antenna of a cray fish, one inch long and one inch in diameter, in the left bronchus of an infant. Owing to there not being any history pointing to the probability of such a foreign body being present, great difficulty was experienced in diagnosing the obstruction, as, when tracheotomy had been performed, the probe passed freely through the obstruction into the left bronchus; after several attempts it was successfully extracted, and the patient did well. The portion of antenna had been swallowed with the bristly segmented hair pointing upwards, which, whilst facilitating passage downwards, rendered nugatory all efforts of expulsion.

StGeorge Reid.

Fraenkel.—*Pathological Specimens of Larynx due to Measles.* (Biologische Abtheilung des ärztlichen Verein, Hamburg, June, 1898.) "Münchener Med. Woch.," 1898, No. 28.

THE preparations showed deep ulceration on the vocal cords and over the arytenoid cartilages, which extended to the perichondrium and cartilage, causing partial necrosis. One preparation showed a funnel-shaped ulcer at the anterior commissure, at the base of which the necrotic thyroid cartilage could be seen and felt. Another preparation showed, in addition to necrotic changes on the posterior pharyngeal wall, necrosis of the mucous membrane over both vocal processes of the arytenoids, with the necrosed cartilage lying adjacent.

Condition, if recovery ensues, is associated with hoarseness or difficulty in breathing. It forms a parallel to the processes observed in some cases of typhoid, and is due to invasion of pyogenic microbes from the surface. He observed four cases in one epidemic, and two in another.

Guild.

¹ Read before the Annual Meeting of the No. 2 Branch of the British Medical Association.

Jurasz (Heidelberg).—*Demonstration of Case, where Laryngeal Cancer had been Removed by Endo-laryngeal Operation.* (Jahresversammlung des Vereins süddeutscher Laryngologen zu Heidelberg.) "Münchener Med. Woch.," No. 27, 1898.

A WOMAN, forty-four, was seen on the 19th January, 1897. She had been hoarse for a year. An uneven, superficial, ulcerated thickening was seen on the right vocal cord. It was thought to be tubercular as there was impaired resonance and diminution of the respiratory murmur at the left apex. Mobility of the cord was intact. In the middle of February the thickening was removed with a sharp spoon, but reformed quickly, so that in March a second removal was required. Microscopic examination was indefinite. Disease slowly progressed; removal was undertaken again in August. Certain parts were suspicious of malignant disease. In October the granular infiltration extended over almost the whole pars ligamentaria of the right cord. The left cord was also symmetrically thickened and hyperæmic. There was no glandular enlargement, no pain on swallowing, no discomfort except aphonia. Sharp spoon was used again, and epithelioma was diagnosed microscopically. On December 8th, with local anæsthesia, he removed the right vocal cord from the anterior commissure to the processus vocalis with an instrument which was shown, at the same time thickening on the left cord and anterior commissure was cauterized. As he thought this would impair the healing, on the 14th December he cut out completely the anterior part of the left cord and the infiltration in the anterior commissure. There was no hæmorrhage nor pain worth mentioning. In February healing was complete. From the cicatrix originated two membranes resembling the vocal cords, which had the fault that they were united anteriorly. The patient for four weeks has spoken with a loud hoarse voice.

Remarks: The epithelioma developed on the right cord and produced by contact the same change on the symmetrical part of the left cord. Thus there was auto-inoculation of cancer as described by Semon and Butlin.

Local circumscribed cancer can be removed as thoroughly with suitable instruments by endo-laryngeal methods.

The vocal cord removed may be almost completely replaced by cicatricial tissue.

In the discussion which followed the dangers of hæmorrhage were pointed out by Noltinius and Ludwig Wolff. In the experience of Moritz Schmidt, and Jurasz they are slight.

Guild.

Killian, Gustav.—*Direct Bronchoscopy.* (Jahresversammlung des Vereins süddeutscher Laryngologen, May, 1898.) "Münchener Med. Woch.," 1898, No. 27.

He has practised bronchoscopy inferior since July, 1897. He anæsthetizes the bronchi with ten per cent. of cocaine; then introduces a tubular speculum, oiled and warmed, into the tracheal wound. He uses for illumination Kirstein's frontal lamp or Carper's electric lamp. In a patient whose height was one hundred and sixty-eight centimètres he used a tube with a diameter of nine millimètres. At a distance of fourteen centimètres from the tracheal wound he reached the bifurcation, and passed into the right bronchus. At first he saw only its beginning. He pushed the tube carefully onwards, and saw the entrance to the bronchial tube which led to the upper lobe; then the division of the bronchus for the middle and lower lobes. The tube was five centimètres past the bifurcation; its end by external measurement was in the fourth intercostal space. The tube was arrested by the breadth of the bronchial lumen. There was no hæmorrhage nor pain. The bronchial mucous membrane was dry and pale. The bronchial rings shone

through. The division of the right bronchus looked analogous to the trachea. In order to see the left bronchus he applied cocaine by means of a pledget introduced through the speculum, and passed the tube 4.5 centimètres into the left bronchus without discomfort and saw the division into the lower and upper lobes.

He examined a boy of six in the same way. The breadth of the tube was 7.5 millimètres.

Direct bronchoscopy may be practised with the same results from above.

The larynx should be anæsthetized with twenty per cent. of cocaine, especially on the epiglottis and posterior wall. In a patient whose height was one hundred and fifty-two centimètres the distance from the mouth to the bifurcation was twenty-seven centimètres. Usually only the entrances to the chief bronchi are visible. Further introduction of the tubular speculum (diameter nine millimètres) into the right bronchus for a distance of five centimètres brought into view the division into middle and lower branches. The division of the left bronchus is seen at a distance of four centimètres. He obtained the same results in a series of cases.

In nervous cases it is better to gradually accustom the patient to the procedure and not to attempt too much at once.

Embarrassment of breathing is not caused. In bronchial catarrh there is increased irritability, and mucous may require to be removed from the tube. Coughing is not dangerous.

The practical value of direct bronchoscopy cannot at present be determined apart from foreign bodies and bronchial affections. It may be of use in diagnosis and treatment of lung diseases.

Guild.

Klemperer, F.—*Ueber die Stellung der Stimmbänder nach Recurrens und nach Posticusdurchschneidung.* (Jahresversammlung des Vereins süddeutscher Laryngologen, May, 1898.) "Münchener Med. Woch.," No. 28, 1898.

THE author's investigations were prompted by Grossman's communication, which stated that the median position of the vocal cord which was hitherto considered the result of abductor paralysis was due to complete paralysis of the recurrent; after division of the recurrent the corresponding vocal cord was in the position of marked adduction. Dogs were used in the experiments. When the exposed recurrent was squeezed with forceps, the vocal cord was seen in the middle line; the same position was observed after section. This is due to nerve irritation on section. By careful preparation of the nerve, with a clean cut through the nerve, the vocal cord was not in the middle line. Where it does occur, the median position is only transitory. After a few minutes in all cases the cord was away from the middle line, in the position, which must be described as the cadaveric, it remained. This division is only marked by division of one recurrent. Double division induces stenosis due to diminution of the intratracheal air pressure. The real position after double division is seen first after tracheotomy. After single division of the recurrent, the paralyzed vocal cord is fixed one to two millimètres from the middle line. The other cord is abducted strongly on inspiration, there is no stenosis. After division of one crico-arytenoideus posticus, he found the corresponding vocal cord near the middle line; the arytenoid did not move outwards, and there was no abduction. After double division of the postici, the condition exactly corresponded to that after double abductor paralysis in the human subject.

Guild.

McBride, P. (Edinburgh).—*On the Origin of the so-called Laryngeal Vertigo.* "Archiv. für Laryngol. und Rhinol.," Bd. VII., Heft 1.

IN an article on laryngeal vertigo, by Schadewaldt, published in the "Archiv für Laryngologie," Band V., the author's views on this subject were misrepresented.

He here states them afresh, maintaining his theory as to the manner in which the attacks are produced.

The attack is preceded by a fit of coughing, or, in other words, by a number of spasmodic inspirations, followed by spasmodic expirations, with partially closed glottis. Now, it is undoubted that the glottis is closed during coughing, and that this takes place after a full inspiration. In laryngeal vertigo the closure is more complete.

The author holds that the increased pressure on the walls of the alveoli interferes with the free circulation of the blood through the lungs, and consequently diminishes the amount of blood in the left side of the heart. In addition, the pressure upon the large intra-thoracic vessels hinders the return of the venous blood; and it is on this account that the face becomes pale or bluish-red after spasm of the glottis. It is quite conceivable that compression of the heart between the unyielding lungs and the thoracic wall may contribute to the paralysis of its movements.

In support of the above view it should be mentioned that Weber showed that forced expiration with closed glottis could easily produce insensibility; and on one occasion, while making experiments of this kind on himself, he had an attack which, from his description, must have closely resembled the so-called laryngeal vertigo.

In the author's opinion the phenomena occur, in the majority of cases, in the following order: after a number of fits of coughing the glottis is closed so tightly that the vocal cords do not yield to the compressed air within the lungs and trachea; intra-thoracic pressure ensues, and, in consequence, unconsciousness. Immediately hereafter the vocal cords relax; so that nothing indicates an interference with respiration.

A. B. Kelly.

McKee, A. B.—*Asepsis in Otology and Laryngology*. "Laryngoscope," May, 1898.

THE following are suggested as practical hints:—

1. To sterilize cutting instruments, place in a two and a half per cent. carbolic acid solution for fifteen to twenty minutes, and then dip for a few seconds into boiling water.

2. To sterilize trays, dishes for instruments, etc., pour over them a few drops of alcohol and ignite.

3. To sterilize blunt instruments (forceps, spatulae, etc.), pass through a spirit lamp.

4. To sterilize catheters, antrum cannulae, etc., boil for a few moments in a porcelain-lined dish.

5. To sterilize cotton pledgets for wiping out the ear, dip the cotton-wound probe into a saturated alcoholic solution of boric acid, ignite it, and allow it to burn for a few seconds, extinguishing before the cotton is charred.

6. To preserve needles, keep in pure lysol.

W. Milligan.

Moore.—*Adenoiditis in the Adult*. "Rev. Hebdomadaire de Lar.," Jan. 29, 1898.

THE author draws attention to the not infrequent occurrence of acute and subacute inflammation of post-nasal adenoids in the adult—an accident which has been observed at any age up to fifty-five. Acute coryza, follicular tonsillitis, pus infection from sinusitis, rheumatism, the menopause, and syphilis, are given as direct or predisposing causes of such attacks. The nasal mucosa and the posterior pharyngeal wall may be normal in appearance while the patient complains of nasal obstruction, with loss of nasal resonance, deafness, tinnitus, and an unaccustomed dropping of mucus from the post-nasal space. Posterior rhinoscopy reveals a variable degree of redness and swelling of the post-nasal adenoid tissue, with discharge of muco-purulent or serous discharge from the crypts. In at least one case bacteriological examination has proved the pneumococcus of Friedländer

to be the predominating micro-organism present. The lips of the Eustachian orifice are swollen, and the signs of acute or chronic middle ear catarrh are present. Purgatives and quinine are indicated internally, and cocaine and boracic ointment should be introduced through the nasal passages, coupled with inhalations. On no account should Politzerization or nasal douching be practised for fear of driving infective secretions into the middle ear. The only serious prevention of recurrence is removal of adenoid hypertrophies by operation.

Waggett

Ross, George F. (Montreal). — *Bilateral Abductor Laryngeal Paralysis*. "Canada Med. Rec.," May, 1898.

AFTER discussing the importance of thorough examination of the larynx, and the relation which the general condition bears to disease of that organ, the clinical history of a case of bilateral abductor paralysis is given.

It occurred in a married man aged fifty, with the following history:—Eight years ago he had gonorrhœa. Three years ago he had an attack of acute rheumatism, which left his left leg weak and painful, causing lameness for eight months. For twenty-three years he had taken three or four quart bottles of beer daily. Complained of soreness of throat in beginning of 1897, and in March of that year, when drinking water, had a choking spasm. Since that time this has always occurred on attempting to swallow cold fluids. Continued to work as cab-driver until February, 1898, when increasing difficulty in breathing compelled him to cease. During the night-time he always seemed threatened with suffocation. Every morning coughing would dislodge mucous from the throat.

Examination.—Left leg is smaller than right, and left patellar reflex exaggerated. Pupil of left eye smaller than right. On closing eyes cannot walk without staggering. Voice will break occasionally with high falsetto tone. Arms are normal in co-ordination. Examination of larynx shows catarrhal laryngitis. Epiglottis normal. Ventricular bands hyperemic, partially overlapping cords. Breadth of cords in sight two millimètres, margins thick and reddish. Both vocal cords permanently abducted, leaving only very narrow chink. Inspiratory effort forced the cords still closer together, producing very severe stridor.

The patient remained in the hospital two weeks on full diet. The treatment consisted of sedatives, tonics, and electricity to larynx. He improved in every way. The chink also widened sufficiently to afford fairly comfortable breathing and less disturbed sleep. The intention was to continue galvanism and Faradism and report again later.

Price Brown.

Woodbury, Frank (Philadelphia). — *Urticaria, involving the Larynx and causing Asphyxia*. "Philadelphia Polyclinic," July 2, 1898.

CASE of a man aged forty-five, who, whilst in good health, was suddenly seized with dyspnoea and faintness, followed by all the symptoms of extreme asphyxia. When medical aid arrived, the man, who was apparently dead, revived under stimulants and injection of $\frac{1}{100}$ grain strychnine nitrate. He stated that he, once before—three years ago—had a similar attack, with transient swelling of the face, accompanied by congestion, and that since then he had suffered from frequent slight attacks, apparently having no connection with errors of diet. Previous to the present attack he had been extremely busy, with very little sleep or food. He had just finished a long railway journey, and had taken a cheese sandwich with a glass of beer, when he began to feel his lips swelling and feeling like wood; his face rapidly became swollen and he lost consciousness. On examination the characteristic lesions of urticaria were found on both legs; and the patient remembered having suffered from intense itching as the attack was coming on.

St George Reid,

REVIEWS.

Handbuch der Laryngologie. Lief. 16 und 17. Wien: Alfred Hölder, 1897.

THAT Sir Felix Semon was asked to write the article on "Laryngeal Neuroses" in the above work is a further proof of Dr. Heymann's excellence as an editor. In no department of laryngology are there so many difficult questions to be dealt with, and it will be universally admitted that no one is better fitted for the task than the writer of the article before us.

Semon begins by clearing the ground, as it were, by a brief historical *résumé*. In no part, he says, did the classical work of Türck seem more complete than in the chapter devoted to the nervous affections of the larynx, and for fourteen years after that work appeared there were practically no additions to our knowledge in this department. It was the discovery by Rosenberg and Semon, in 1880-81, of the greater vulnerability of the abductor fibres in all organic nerve lesions, and Krause's demonstration, in 1883, of the cortical centre for phonation that entirely upset all the accepted views regarding laryngeal neuroses, and opened up the great controversial questions which are as yet unsettled.

The author next proceeds to an exhaustive description of the anatomy and physiology of the nervous mechanism of the larynx, treating the many difficult points with a lucidity thoroughness and impartiality that make this part of his essay of the highest value. The method adopted is not merely expository but also historical, and the work of Ferrier, Krause, Horsley, Onodi, Klemperer, Russell and many others is fully detailed in chronological order.

It is not necessary for us to follow all this discussion minutely, as everyone who has taken any interest in laryngology is already familiar with the facts here related. But it is of interest to learn the conclusions arrived at by such an authority as Sir Felix Semon on the many unsettled questions which are here debated.

There is a very interesting discussion of the view, which is especially associated with the name of Grabower, that the spinal accessory has nothing to do with the motor innervation of the larynx. The real difficulty of this position is to reconcile it with the numerous clinical observations in which paralysis of one cord is accompanied by paralysis of the corresponding sterno-mastoid and trapezius muscles, and sometimes of one side of the palate and tongue also. Semon is careful to explain that he does not wish to be regarded as an opponent of the views of Grabower, which may yet prove to be correct, but takes the position that at present the origin of the motor innervation of the larynx is not finally determined.

Regarding the peripheral distribution of the laryngeal nerves, Semon agrees with the generally accepted views of Luschka, and thinks that the conclusions of Exner are so opposed to all clinical and pathological observations that they cannot be received as true, at least as regards man.

As to the presence of sensory fibres in the recurrent nerve, which Krause believed he had demonstrated in 1892, Semon holds to the conclusions drawn from his own and Horsley's experiments, and confirmed by Burger and Onodi, that the recurrent is a purely motor nerve.

The question as to why the abductor nerves and muscles should always be the first to succumb in organic lesions is still a problem of the future. No doubt the explanation lies in some bio-chemical difference in the two sets of muscles and nerve fibres, the exact nature of which it remains for some future observer to discover.

The classification of laryngeal neuroses has always presented many difficulties, and these are now more numerous than ever. It is not possible to adopt an anatomical or physiological basis, so long as it remains an open question if the spinal accessory has anything to do with the motor innervation of the larynx, or if the recurrent is a mixed or a purely motor nerve. Again, an etiological basis is not possible so long as some hold that a one-sided cortical lesion can produce paralysis of the opposite side of the larynx, while others maintain that the cortical centres have no pathological importance whatsoever. Semon, therefore, adopts the old division into sensory and motor neuroses, with three subdivisions of each, namely, hyperæsthesia, anæsthesia, paræsthesia, and hyperkinesia, hypokinesia, parakinesia.

Regarding the etiology of glottic spasm, Semon admits that in children it may arise from pressure on one recurrent, because in them the glottis is so small that spasm of one cord may produce sufficient narrowing to cause dyspnœa. But much more frequently the cause lies in direct or reflex irritation of the cortical centres. Glottic spasm in adults is most commonly due to hysteria, and never arises from pressure on one recurrent. In those cases of aneurysm where pressure on one recurrent has been said to cause glottic spasm, the dyspnœa was most probably due to pressure on the trachea or bronchi.

The glottic spasm so common in tabes is dealt with separately under "Spasms of individual groups of muscles," an arrangement based on the fact that in many cases there is abductor paralysis present, and therefore the spasm must be purely one of the adductors. We fail to see the reason for treating the spasm of tabes under a separate heading, for Semon admits that where there is no abductor paralysis the spasm of tabes differs in no way from ordinary glottic spasm. That is to say that both the abductors and adductors are involved in the spasm, and only the predominance of the latter over the former brings about closure of the glottis. The suffocative attack of tabes are classified as follows:— (1) Spasm of the glottis without abductor paralysis; (2) Spasm of adductors with paralysis of abductors; (3) Paralysis of abductors with acute catarrh, causing an increase of the stenosis of the larynx.

On the continuous form of nervous cough Semon makes some interesting observations. Of the eight cases he has treated seven were males, and in none was there any evidence of hysteria. In one only could the cough be traced to a nasal reflex, and all the others appeared to be due to direct central irritation. In six out of eight cases a sea voyage of one to three weeks brought about a lasting cure, where months of treatment by physic had given no result.

As to laryngeal vertigo, while confessing a complete absence of personal experience of this disease, Semon is inclined to regard many of these cases as true epilepsy, with laryngeal aura. He admits, however, that under the term laryngeal vertigo a number of conditions differing widely in their pathology have been described.

The discussion of the general etiology of laryngeal paralysis opens with a statement of what is known as Semon's law. In all functional paralysis the abductors are exclusively affected, while in all progressive organic lesions the adductors are the first to suffer. Indisputable cases of functional abductor paralysis have not been recorded. Theoretically we must admit that the respiratory centre in the cortex might be alone affected by functional paralysis, or together with the adductor centre, but even then the respiratory centre in the medulla would be sufficient to completely hide the loss of function of the subsidiary cortical centre. The old fight over the vulnerability of the abductors, and the impossibility of a one-sided paralysis from a one-sided brain lesion, is fought again at great length, and apparently with the same triumphant vindication of the author's position in regard to these questions. The different forms of laryngeal paralysis are then treated in detail, and the essay concludes with a description of the various disturbances of laryngeal co-ordination, aphonia spastica, functional inspiratory spasm, and ataxia of the vocal cords.

It would be difficult to speak too highly of this brilliant article, which must long remain the most complete statement of our knowledge in this department of laryngology.

J. Middlemass Hunt.

Weber, Hermann and F. Parkes.—*The Mineral Waters and Health Resorts of Europe.* Second edition. Smith, Elder & Co., London.

THIS edition is accompanied by a map, which is carried in a pocket at the end of the book, one is thus enabled to refer to it with greater ease.

The book contains many noteworthy additions in the present edition, foremost amongst which we notice the chapters on inland climatic health resorts, and grape, whey, and milk cures, with sanatoria for diphtheria and phthisis. To deal with the latter first: under milk cure we are told that milk should only be used fresh, when obtained from animals whose freedom from disease is undoubted. It is a great pity that this truism is not more insisted on in our text-books. The pages devoted to sanatoria contain as much as one needs to know about the general principles of this branch of treatment.

As to the book in general, it is one that will commend itself to all, both as a book of reference and as a text book. The index is much increased in value by the printing of the principal reference in leaded type; this saves needless waste of time, and, one may add, temper.

The first chapter is on the science of hydro-therapeutics, and will be of general interest, and will serve as another example of the care with which the editors have studied their readers' time and convenience. We may here refer to the careful marginal notes of this and the two succeeding chapters. These chapters are on the general classification and principles of balæology, and present little that is new. Some slight absence of novelty is, however, due to causes other than those within the

control of the editors ; they have, however, served up in a new form the general views, and amply made up for this by the copious footnotes, which are so brilliant a feature of the work.

If one would choose the chapter in the book of the greatest general interest it is without doubt that on the selection of health resorts, and even if the reader is not at the time he peruses the book, in search of one, he cannot fail to find much of interest. He will certainly find subjects treated in new lights, hints and suggestions, which will give him food for reflection.

In conclusion, we have rarely read a work which promises to repay study more than this one does.

Manders, H.—*The Ferment Treatment of Cancer and Tuberculosis*. Illustrated. Rebmam Publishing Company, 129, Shaftesbury Avenue, London.

THIS is a well got up and admirably printed volume of 250 pages. The subject matter is divided roughly into two parts. Of these two, the first and smaller part, 68 pages, is devoted to a *résumé* of what are for the most part the accepted ideas of bacteriologists as to the life and action of ferments, together with a reference to ptomaines, etc.

The latter part of the subject is natural immunity.

Now comes the important section of the book, divided into : "Phagocytosis by formed ferments," "Pure yeasts," "Action of pure yeasts in healthy tissue," "Action and therapeutics of pure yeast ferments."

It is this part of that one must read with care, for one is startled to come upon the idea that *pure yeasts* can—(1) by *injection* into the body act as phagocytes ; (2) by special treatment be made capable of, (a) combatting tubercle bacilli, (b) destroying cancerous tissues. In fact that all microbic disorders are to some extent amenable to this form of medication.

We are not quite in a position to say absolutely that these things are so ; we can say, however, that the idea of vegetable phagocytes is fascinating, and not so improbable as some aver.

This is an age of wonders, and it seems that this system should be accorded a fair trial under impartial judges.

Those of our readers who are interested in the matter should read the book for themselves ; it certainly has a genuine scientific basis.

THE MEYER MEMORIAL.

WE have received the following letter, and print it without comment, as none is needed :—

Copenhagen, le 12 Sept., 1898.

Monsieur,—J'ai l'honneur de vous faire savoir que l'inauguration du monument international érigé à Hans Wilhelm Meyer aux lieu à Copenhagen, le 25 Octb.

Sir Felix Semon a promis de prononcer le discours inaugural au nom du comité international.

Il nous fera grande plaisir si ceux qui ont contribué au monument et surtout les membres des comités de pays différents voudraient bien honorer la fête par leur présence.

Agréez, Monsieur, l'assurance de mes sentiments respectueux.

E. SCHMIEGELOW,

President du Comité international.

ERRATA.

Nasal Splints, page 386, August number, for "one-eighth, two-eighths," etc., read "one-sixteenth, two-sixteenths," etc.

THE
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RHINOLOGY, AND OTOTOLOGY.

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BRITISH MEDICAL ASSOCIATION.

Meeting, August, 1898.

Dr. W. MILLIGAN. *Some Observations upon Antrectomy as a Means of Treatment in Suppurative Middle Ear Disease.*

Mr. President and Gentlemen : The surgical treatment of suppurative middle-ear disease, especially when complicated with suppurative disease within the mastoid process, has of late aroused much interest among both general and aural surgeons.

So much has been written, both for and against the various methods of treatment now in ordinary use, that I feel that an apology is necessary for introducing this subject once more to your notice. My main object in doing so, however, is to plead for an earlier and for a more frequent resort to antrectomy, especially in those cases of chronic suppurative middle-ear disease which have run a long and tedious course.

Before, however, discussing this question in its relation to the treatment of chronic suppurative catarrh I desire to say a few words upon the advisability of opening the mastoid antrum and the mastoid cells in cases of acute and sub-acute suppurative catarrh. In those cases in which the mucous membrane lining the mastoid antrum and the mastoid cells is in an acute suppurative condition, and where there is high fever, rapid pulse, local and generalized pain, and all the symptoms indicative of tension, few will, I think, hesitate to advise early opening and drainage, and no one will, I think, deny the almost invariably successful issue of such cases, not only as regards the life of the individual, but also as regards the preservation of the special function of hearing.

In the treatment of many surgical conditions an expectant and a conservative line of treatment is no doubt admissible and advisable, but the attitude of timidity and procrastination which has so frequently in the past restrained the surgeon from adopting the only truly scientific line of treatment in such cases, viz., the opening of the mastoid process, is, I think, to be condemned. It must be remembered that pus may exist, and exist in very considerable quantities, within the mastoid cells, especially when situated deeply, without there being any external evidence of its presence, neither swelling nor œdema of the retro-auricular tissues. In addition to such general symptoms as high temperature, rapid pulse, headache, etc., we have a most important indication in the presence of local pain over the process, frequently most exquisite, and in the presence of an œdematous swelling of the posterior superior meatal wall, "the dip," close to its attachment to the membrana tympani. The persistence of such general symptoms in conjunction with severe local pain, dipping of the posterior superior meatal wall, and the presence of a discharge, whether copious or not, should, I take it, at once determine operative procedure.

There are, however, certain cases met with, which for practical and for clinical purposes may fairly be called sub-acute, which have run a course of perhaps a few months, in which the discharge is fairly free, and in which the sense of hearing is distinctly and progressively becoming more and more impaired, but in which, owing to the absence of all tension, pain is conspicuous by its absence. It becomes a nice question in these cases as to what is the proper course of treatment to pursue, the more so if we know that careful and rational local treatment has already been conscientiously carried out. My experience is that, *cæteris paribus*, the longer a suppurative process lasts in and around the middle ear the greater is the resulting damage to its delicate structures, and the greater is the ultimate damage to the ear as an organ of special sense. We are also all aware that the longer suppuration lasts the greater are the risks of secondary bone disease, and of the many and serious complications which may result from its presence.

If these premises be true, are we justified in continuing a purely local line of treatment? Are we not called upon to interfere in some more radical fashion? In cases such as I have described there is, however, a tendency, owing to the absence of pain, to discountenance any idea of operation, and to continue local treatment for almost indefinite periods.

If we regard the presence of pain as a *sine quâ non* to the performance of a mastoid operation, we, I think, do our patients an injustice, as, despite the continuance of local treatment, suppuration continues, and more and more disorganization of the middle ear results with all its attendant risks.

The question naturally arises in such cases, are we sure that there is a diseased condition of the mucous membrane lining the mastoid antrum or the mastoid cells? Is it not possible that the flow of pus is coming merely from the cavity of the middle ear, and not from its adnexa? This question is certainly at times difficult to answer, but experience has taught me that if the middle ear be cleansed first by syringing, and

second by free inflation with Politzer's bag, and if pus still reappears almost immediately after drying and re-drying of the part, we have to deal with a reservoir of secretion, not simply in the middle ear itself, but in the cavity of the mastoid antrum or mastoid cells, and my experience from operative work fully endorses this statement.

To establish a definite diagnosis of the presence of pus, Ferreri suggested exploratory puncture, Eulenstein advocated percussion of the process, Caldwell transillumination of the cells, while Okouneff suggested that in the case of a mastoid abscess being present there would be a marked diminution of the bony conduction of sound in the region occupied by the purulent collection.

A point of some diagnostic value to which I venture to draw attention, and a point which has, I think, some practical value in the determination or otherwise of the presence of pus within the mastoid, is the surface temperature of the skin over the posterior meatal wall close to its attachment to the membrane in contrast to the surface temperature taken over a similar area upon the anterior meatal wall. In cases where pus is present in the mastoid cells, or where the mucous membrane lining these cells is in a hyperæmic condition, the surface temperature of the posterior wall will be found slightly higher than the surface temperature of the anterior wall. This fact taken in conjunction with the presence of a profuse purulent discharge, and with possibly a slight prolapse of the posterior superior wall close to its attachment to the membrane, should I think, greatly influence us in coming to the conclusion that the tissues within the mastoid are in an unhealthy condition and require free exposure. In such cases my experience of antrectomy has been most happy, and the results following operation have been good both as regards the rapid cessation of discharge and the preservation of the function of the organ.

In careful hands I believe that the modern mastoid operation is a safe procedure. If the general surgeon does not hesitate to open the abdomen for purely exploratory and diagnostic purposes, why should the aural surgeon hesitate to explore the mastoid process for similar reasons? I thoroughly believe that in doubtful cases the safest thing for the patient is to have an exploratory mastoid operation performed, and were this done more frequently and at an earlier date than is at present the custom our out-patient departments would not be so over crowded as they are with cases of genuinely chronic middle ear suppuration—cases which consume a large share of the surgeon's time owing to the technical and laborious methods of treatment which are and have to be employed, to say nothing of the destruction which long-continued suppuration produces, and of the disappointing results so frequently obtained as regards the ultimate hearing power of the individual.

I am quite alive to the fact that it is difficult to assign a definite time limit for such cases—to say exactly when local treatment should cease and operative treatment should begin—and I am also quite willing to admit that in private practice a longer time limit for local treatment may safely be allowed than in hospital practice, where, from the nature of the patient's calling, frequent visits to the hospital are not always possible, and where the many details of treatment are frequently but imperfectly performed.

My experience of this class of case—subacute suppurative catarrh—has, however, taught me that where suppuration has lasted for a period of two months without showing any real signs of abatement, and where the ordinary methods of examination go to prove that the main lesion is within the mastoid cells or antrum, an exploratory mastoid operation is advisable. Should pus be found, as it almost invariably will be found, the resulting free drainage will expedite the cure of the disease in a most remarkable fashion, and will be the first really valuable step in tending to restore the organ to its normal function. Should pus, however, not be found, it merely remains to immediately close the external wound and to allow healing by first intention to take place.

In cases of chronic suppuration—I mean cases which have run a course of perhaps a few years—we have, as a rule, some bone lesion superadded. This implication of the temporal bone may be easy of recognition and of investigation by means of inspection, palpation with the probe, etc., but it may be so situated in the depths of the mastoid antrum or mastoid cells as to make it impossible to gauge its actual extent although it is capable of keeping up an almost persistent purulency.

Frequent or persistent sanious discharge in the absence of granulation tissue or polypi lends colour to the idea that diseased bone is present, so also does a persistent offensive discharge even after careful antiseptic cleansings, as also does the constant reappearance of granulation tissue after frequent removal. The occasional presence of bony spiculæ may also at times be seen and felt in the discharge from the ear.

In such cases we have a marked absence of pain, except upon the supervention of some acute attack grafted upon a chronic base, while we have persistent discharge, occasional hæmorrhage from the ear, the presence of masses of granulation tissue, progressive impairment of hearing, impaired general health, and depressed vitality.

Cases such as I have pictured are particularly common, and by their chronicity and intractability to local treatment are prone to weary both patient and surgeon.

Recent bacteriological discoveries have, moreover, shown that such cases possess an inherent element of danger, and that serious intracranial trouble—meningitis, thrombosis, abscess, etc.—may suddenly supervene, owing to the passage of septic organisms from the middle ear to these intracranial structures.

With such knowledge at our command are we justified in countenancing methods of purely local treatment for indefinite periods? Is it not the duty of the aural surgeon to step in and by a suitably planned and properly executed operation to clear out the existing focus of sepsis, whether in the middle ear or adjoining mastoid cells? The absence of pain in these cases has, I think, largely determined a non-operative course of treatment, and radical measures have frequently been delayed until the supervention of pain has only been the immediate precursor of a fatal meningitis, etc.

Now, sir, my contention is that in cases where suppuration has persisted for twelve months, and where for at least three months careful and rational local treatment has been tried but without avail, the mastoid

antrum and contiguous mastoid cells should be opened and cleared out—the precise form of the operation, whether a Schwartze, a Stacke or a modified Stacke being determined by the peculiarity of each individual case. With proper precautions and with suitable instruments and means of illumination the mastoid operation as at present performed is, I believe, a safe procedure, and its results in the great majority of cases eminently satisfactory.

In cases proved to be of tubercular origin—cases which have run an asthenic and almost chronic course from the commencement—early opening and drainage should, I believe, at once be resorted to without attempting any prolonged course of local treatment, for even if it has the effect of temporarily arresting purulency, an early recurrence may safely be predicted.

When cholesteatomatous masses occupy the attic and antrum I am strongly in favour of early and radical operation and the maintenance of a permanent mastoid fistula. Even should the mastoid operation not have the effect of producing a permanently dry and cicatricial lining to the newly-formed antro-tympanic cavity, I believe that the patient is in a very much safer condition than before operation owing to the fact that all loculi and foci in which germ-teeming pus may collect are done away with, and parts which previously were concealed and difficult of access are now thoroughly exposed and capable of being accurately treated by local applications.

To illustrate the above remarks I have carefully analyzed the notes of one hundred and fifty mastoid operations, and have divided the cases into three classes—acute, subacute, and chronic—according to the previous duration of disease and intensity of symptoms.

Of the one hundred and fifty cases, ten (or $6\frac{2}{3}$ per cent.) were acute, and presented the ordinary symptoms of a rapid course, high fever, quick pulse, severe mastoid pain, and the ordinary objective evidences of an acute suppurative middle ear catarrh. In all, after a short preliminary trial of local treatment, local depletion, enlargement of the existing perforation, etc., the mastoid antrum was opened and drained, any adjacent mastoid cells which were implicated being freely opened up and cleansed.

The result in all was eminently satisfactory, rapid healing taking place, with recovery of hearing power.

Of the one hundred and fifty cases, ten (or $6\frac{2}{3}$ per cent.) were subacute, had lasted for periods varying from two to three months, and were characterized by a copious discharge, progressive loss of hearing power, but by an absence of any degree of local pain, and had been subjected to the ordinary methods of local treatment from an early stage of the disease.

After free opening of the antrum and contiguous mastoid cells nine entirely recovered, the hearing power returning to practically the normal amount, and one case was lost sight of.

Of the one hundred and fifty cases, one hundred and two (or 68 per cent.) were genuinely chronic, and had lasted for very varying periods.

In all (except the tubercular cases, and cases with cholesteatomata) persistent and careful local treatment had been tried for periods varying from twelve to twenty-four months, but without avail.

In seventy-eight Stacke's modified mastoid operation was performed, with the following results :--

In sixty-five a complete recovery took place, by which I mean that all suppuration completely ceased, and the newly-formed antro-tympanic cavity became nicely papered with an epidermal covering. One died, and twelve were either lost sight of or are still under treatment.

In seventy-two the ordinary Schwartz operation was performed. Of these, forty-seven recovered, eight died, and seventeen were either lost sight of or are still under treatment.

Of the one hundred and fifty cases, eighteen (or 12 per cent.) were of tubercular origin, and were submitted at once to operation. Nine of the cases recovered, and six died, the cause of death in three cases being meningitis, in one tubercular enteritis, and in two general marasmus. In three cases the subsequent history is unknown.

Of the one hundred and fifty cases, ten (or 6½ per cent.) were implicated with the presence of cholesteatomatous masses, and were submitted to early and radical operation. Of these ten cases, ten recovered, in five a permanent mastoid fistula being established; in one the cavity being allowed to granulate from the bottom, and in four Stacke's operation was performed.

With regard to the subsequent hearing power of those patients who had been operated upon for chronic mastoid disease I have no very accurate notes. My general impression is, however, that in the majority of the cases the hearing power was after operation very much what it was before operation. In a few it was made worse, and in a small number of the cases the hearing power for conversation was somewhat improved.

Name.	Age.	Sex.	Duration of Disease.	Ear or Ears affected.	Condition of Middle Ear.	Nature of Operation.	Results.
T. J. ...	5 mths	M	2 weeks	R & L	Tub. Mastoid Disease	Mastoid (Schwartz)	Death Sup. Meningitis
B. A. ...	21 years	F	4 "	L	Ot. Med. Sup. Acuta	Do.	Cure
J. C. ...	26 "	M	2 years	R	Ot. Med. Sup. Chronica	Do.	Cure Permanent Fistula
S. P. ...	8 mths	M	4 months	L	Cholesteatoma Ot. Med. Sup. Chronica	Do.	Cure
W. W. ...	15 "	M	4 "	R & L	Mastoid Fistula R. Tub. Mastoid Disease	Do.	Death Meningitis
J. C. ...	6 years	M	A few weeks	L	Ot. Med. Sup. Acuta	Do.	Cure
L. D. ...	29 "	F	Many years	L	Mast. Abscess Ot. Med. Sup. Chronica	Mastoid (Stacke)	Do.
L. S. ...	39 "	F	years	R	Mastoid Caries Ot. Med. Sup. Chronica	Do.	Do.
L. W. ...	9 "	M	1 year	R	Chrouica Fistula Ot. Med. Sup. Chronica	Do.	Do.
M. C. ...	6 "	F	2 years	L	Granulations Caries Ot. Med. Sup. Chronica	Mastoid (Schwartz)	Do.
E. T. ...	14 "	F	years	L	Sequestrum Ot. Med. Sup. Chronica	Do.	Under treatment
					Fistula		

Name.	Age.	Sex.	Duration of Disease.	Ear or Ears affected.	Condition of Middle Ear.	Nature of Operation.	Results.
L. C. ...	4 mths	F	7-8 weeks	R	Ot. Med. Sup. Chronica Granulations Caries	Mastoid (Schwartz)	Unknown
M. P. ...	10 "	M	A few weeks	R	Ot. Med. Sup. Acuta Mast. Abscess	Do.	Do.
A. K. ...	1 year	F	2 months	R	Ot. Med. Sup. Chronica Caries	Do.	Cure
A. T. ...	25 years	M	18 years	R	Ot. Med. Sup. Chronica Caries Sinus	Mastoid (Stacke) Sinus operation	Do.
I. A. ...	17 "	F	3 "	R	Ot. Med. Sup. Chronica Cholesteatoma	Mastoid (Schwartz) Per. Fistula	Do.
L. B. ...	17 "	M	"	L	Do.	Do.	Do.
A. L. ...	17 "	F	"	R	Ot. Med. Sup. Chronica Caries	Mastoid (Stacke)	Do.
E. R. ...	13 "	F	9 "	L	Do.	Do.	Unknown
E. F. ...	11 "	M	A few days	L	Ot. Med. Sup. Acuta Mast. Abscess	Mastoid (Schwartz)	Cure
S. T. ...	10 "	M	years	L	Ot. Med. Sup. Chronica Granulations Caries	Mastoid (Stacke)	Unknown
J. B. ...	10 "	M	5 "	R	Do.	Do.	Cure
W. H. ...	31 "	M	A few years	L	Do.	Do.	Do.
J. D. ...	17 "	M	3 years	L	Ot. Med. Sup. Chronica Cholesteatoma	Mastoid (Schwartz) Per. Fistula	Do.
J. W. ...	4 "	M	1 year	.....	Ot. Med. Sup. Chronica Granulations Caries	Mastoid (Stacke)	Do.
A. B. ...	5 "	M	4 years	R & L	Do.	Mastoid (Schwartz)	Unknown
H. K. ...	11 "	F	4 "	R	Do.	Mastoid (Stacke)	Cure
L. P. ...	11 "	F	"	L	Do.	Do.	Under treatment
H. T. ...	7 "	M	10 weeks	L	Do.	Do.	Cure
A. W. ...	7 "	F	1 year	L	Do.	Do.	Do.
J. W. ...	10 "	M	3½ years	L	Do.	Do.	Under treatment
E. H. ...	7 "	F	1½ "	L	Do.	Do.	Do.
E. G. ...	27 "	F	"	L	Do.	Do.	Cure
G. A. ...	3 "	M	4 months	L	Do.	Do.	Under treatment
C. C. ...	23 "	M	years	L	Ot. Med. Sup. Chronica Cholesteatoma	Do.	Cure
G. S. ...	15 "	M	3 "	R	Ot. Med. Sup. Chronica Fistula	Mastoid (Schwartz)	Cure
M. R. ...	5 "	F	2½ "	R	Ot. Med. Sup. Chronica Caries Granulations	Do.	Under treatment
M. I. ...	22 "	M	"	R	Ot. Med. Sup. Chronica Caries	Mastoid (Stacke)	Cure
A. M. ...	25 "	M	5 weeks	R	Ot. Med. Sup. Acuta Mast. Abscess	Mastoid (Schwartz)	Do.
E. G. ...	18 "	F	years	R	Ot. Med. Sup. Chronica Caries	Mastoid (Stacke)	Do.
R. H. ...	5 "	F	1½ "	R	Do.	Mastoid (Schwartz)	Do.

Name.	Age.	Sex.	Duration of Disease.	Ear or Ears affected.	Condition of Middle Ear.	Nature of Operation.	Results.
W. G. ...	6 years	M	6 months	R & L	Ot. Med. Sup. Caries	Mastoid (Schwartz)	R. cure, L. under treatment
F. D. ...	6 "	F	3 years	R	Do.	Mastoid (Stacke)	Unknown
A. N. ...	4 "	M	3 "	R	Do.	Do.	Cure
L. H. ...	4 "	F	12 months	R & L	Ot. Med. Sup. Chronica Granulations Caries	Do.	Do.
E. P. ...	3 "	M	2 years	L	Do.	Do.	Under treatment
J. P. ...	3 mths	M	1 week	R	Ot. Med. Sup. Chronica Tubercular	Mastoid (Schwartz)	Death
J. K. ...	5 "	M	3 months	R & L	Do.	Do.	Do.
G. W. ...	7 "	M	5 "	L	Do.	Do.	Cure
R. Y. ...	1 year & 10 mths	M	5 weeks	R	Ot. Med. Sup. Sub-acute	Do.	Do.
R. J. ...	3 years	M	6 months	L	Ot. Med. Sup. Chronica Caries	Do.	Under treatment
K. S. ...	2 "	F	4 "	.....	Do.	Do.	Do.
A. B. ...	12 "	F	5 weeks	R	Do.	Do.	Cure
W. W. ...	6 "	M	years	R & L	Do.	Do.	Under treatment
J. Y. ...	8 "	M	12 months	L	Do.	Do.	Cure
P. S. ...	28 "	F	14 days	L	Ot. Med. Sup. Acuta	Do.	Do.
M. M. ...	25 "	F	14 years	L	Ot. Med. Sup. Chronica Sequestrum	Mastoid (Stacke)	Do.
J. C. ...	10 mths	M	8 months	R & L	Ot. Med. Sup. Chronica Tubercular	Mastoid (Schwartz)	Do.
K. G. ...	3 years	F	1 year	R	Ot. Med. Sup. Chronica Caries	Mastoid (Stacke)	Do.
L. P. ...	23 "	F	years	R	Do.	Do.	Under treatment
E. F. ...	7 "	F	3 "	L	Do.	Mastoid (Schwartz)	Cure
J. S. ...	5 mths	M	3 months	L	Ot. Med. Sup. Chronica	Do.	Under treatment
H. H. ...	5 "	F	2 "	L	Ot. Med. Sup. Chronica Tubercular	Do.	Do.
T. M. ...	56 years	M	1 month	R	Ot. Med. Sup. Sub-acute	Do.	Cure
S. W. ...	12 "	F	years	R	Ot. Med. Sup. Chronica Caries	Mastoid (Stacke)	Under treatment
B. B. ...	10 "	F	2 "	L	Ot. Med. Sup. Chronica Granulations Caries	Do.	Cure
M. G. ...	17 "	F	2 "	R	Ot. Med. Sup. Chronica Granulations Fistula	Do.	Do.
G. H. ...	36 "	M	"	L	Ot. Med. Sup. Chronica Cholesteatoma	Mastoid (Schwartz)	Do.
C. P. ...	8 "	F	1 year	R	Ot. Med. Sup. Chronica	Per. Fistula Mastoid (Schwartz)	Do.
A. H. ...	21 "	F	? years	L	Ot. Med. Sup. Chronica Caries	Mastoid (Stacke)	Do.
J. H. ...	11 "	M	8 "	L	Ot. Med. Sup. Chronica Caries Granulations	Do.	Do.
I. B. ...	11 "	M	4 years	L	Do.	Do.	Do.
F. S. ...	15 "	M	14 days	L	Ot. Med. Sup. Sub-acute	Do.	Unknown

Name.	Age.	Sex.	Duration of Disease.	Ear or Ears affected.	Condition of Middle Ear.	Nature of Operation.	Results.
R. B.	15 years	M	8 years	L	Ot. Med. Sup. Chronic Granulations Fistula	Mastoid (Stacke)	Cure
E. C.	17 "	F	"	R	Ot. Med. Sup. Chronic Granulations Caries	Do.	Do.
G. H.	16 "	F	7 "	R	Do.	Do.	Do.
K. C.	33 "	F	"	R	Do.	Do.	Do.
E. D.	35 "	M	"	R & L	Ot. Med. Sup. Chronic Caries	Do.	Do.
E. W.	25 "	F	3 months	L	Ot. Med. Sup. Sub-acute	Mastoid (Schwartz)	Do.
S. L.	53 "	F	14 days	L	Ot. Med. Sup. Acute	Do.	Do.
E. P.	53 "	F	4 weeks	L	Ot. Med. Sup. Sub-acute	Do.	Do.
R. H.	9 "	M	? years	R & L	Ot. Med. Sup. Chronic Caries	Do.	Do.
R. P.	30 "	M	? "	.....	Do.	Mastoid (Stacke)	Do.
J. M.	13 "	M	8 "	L	Ot. Med. Sup. Chronic Fistula	Do.	Do.
A. D.	65 "	M	3 months	L	Ot. Med. Sup. Sub-acute	Mastoid (Schwartz)	Do.
E. C.	26 "	F	4 years	R	Ot. Med. Sup. Chronic Temporo-Sphenoidal Abscess	Mastoid (Stacke)	Do.
E. J.	15 "	F	6 "	R	Ot. Med. Sup. Chronic Granulations Caries	Do.	Do.
W.	11 "	F	8 "	R	Ot. Med. Sup. Chronic Tubercular	Do.	Do.
M.	21 "	M	3½ weeks	R	Ot. Med. Sup. Acute	Mastoid (Schwartz)	Do.
B. ....	.....	F	years	R	Ot. Med. Sup. Chronic Cholesteatoma	Mastoid (Stacke)	Do.
B. ....	.....	M	12 "	R	Ot. Med. Sup. Chronic Caries	Do.	Do.
H.	21 "	F	18 "	L	Do.	Do.	Do.
B.	37 "	F	27 "	R & L	Ot. Med. Sup. Chronic	Mastoid (Schwartz)	Unknown
N.	4 "	F	6 months	R	Ot. Med. Sup. Chronic Caries	Do.	Cure
T.	30 "	F	20 years	R	Ot. Med. Sup. Chronic Caries Granulations	Mastoid (Stacke)	Do.
G.	10 mths	M	5 months	R	Ot. Med. Sup. Chronic Caries	Mastoid (Schwartz)	Do.
B. ....	.....	M	years	R	Do.	Do.	Unknown
W.	16 years	F	8 "	R	Do.	Do.	Cure
B.	2 "	M	months	R	Ot. Med. Sup. Chronic Tubercular	Mastoid (Schwartz)	Do.
H.	20 "	F	10 years	R & L	Ot. Med. Sup. Chronic Caries	Per. opening (Stacke)	(Permanent opening) Cure
H.	10 "	M	1½ "	R	Ot. Med. Sup. Chronic Cholesteatoma	Mastoid (Schwartz)	Under treatment
W.	21 "	F	3-4 months	R	Ot. Med. Sup. Sub-acute	Per. Fistula (Schwartz)	Cure

Name.	Age.	Sex.	Duration of Disease.	Ear or Ears affected.	Condition of Middle Ear.	Nature of Operation.	Results.
G.	4 years	M	3 years	L	Ot. Med. Sup. Chronica Fistula	Mastoid (Stacke)	Cure
R.	10 mths	M	3½ months	L	Ot. Med. Sup. Chronica Tubercular	Mastoid (Schwartz)	Do.
S.	5 "	M	3½ "	R	Do.	Do.	Death (Meningitis)
A.	20 years	F	? years	L	Ot. Med. Sup. Chronica	Mastoid (Stacke)	Cure
H.	40 "	M	Since childhood	R	Ot. Med. Sup. Chronica Cholesteatoma	Do.	Do.
H.	16 "	F	12 years	R	Ot. Med. Sup. Chronica	Do.	Do.
S.	5 mths	M	4 months	L	Ot. Med. Sup. Chronica Sequestrum	Mastoid (Schwartz)	Under treatment
O.	50 years	F	4 "	R	Sub-acute	Do.	Cure
T.	30 "	F	6 weeks	R	Do.	Do.	Do.
W.	45 "	F	Since infancy	L	Ot. Med. Sup. Chronica	Do.	Death (pneumonia)
T.	26 "	M	20 years	L	Ot. Med. Sup. Chronica	Mastoid (Stacke)	Cure
M.	4 "	M	a few weeks	R	Ot. Med. Sup. Acute	Mastoid (Schwartz)	Under treatment
P.	4 "	M	1½ years	R	Ot. Med. Sup. Chronica Granulations	Do.	Under treatment
L.	2 "	M	1½ "	R	Do.	Do.	Cure
R.	8 mths	F	4 months	R	Ot. Med. Sup. Chronica	Do.	Death (Meningitis)
B.	18 years	F	years	L	Ot. Med. Sup. Chronica	Do.	Cure
H.	8 "	M	7¼ "	R	Do.	Mastoid (Stacke)	Do.
J.	15 "	F	9 "	L	Do.	Do.	Do.
B.	35 "	M	29 "	R	Do.	Do.	Do.
R.	2 "	M	1½ "	L	Do.	Mastoid (Schwartz)	Do.
C.	3 "	M	?	L	Ot. Med. Sup. Chronica Tubercular	Do.	Do.
S.	31 "	F	24 years	R & L	Ot. Med. Sup. Chronica	Mastoid (Stacke)	Do.
M.	24 "	M	17 "	L	Ot. Med. Sup. Chronica Cholesteatoma Granulations	Mastoid (Schwartz)	No Cure
W.L.M.	30 "	M	17 "	L	Ot. Med. Sup. Chronica	Mastoid (Stacke)	Cure
W.	56 "	M	Since childhood	R	Do.	Do.	Unknown
S.	3½ "	F	1½ years	R	Ot. Med. Sup. Chronica	Mastoid (Schwartz)	Cure
B.	12 "	F	? "	L	Ot. Med. Sup. Chronica	Mastoid (Stacke)	Do.
F.	25 "	F	? "	R	Do.	Do.	Do.
W.	40 "	F	"	R	Do.	Do.	Do.
C.	48 "	M	1 month	R	Ot. Med. Sup. Sub-acute Extra-dural Abscess	Do.	Do.

Name.	Age.	Sex.	Duration of Disease.	Ear or Ears affected.	Condition of Middle Ear.	Nature of Operation.	Results.
P.	17 years	F	years	L	Ot. Med. Sup. Chronic	Mastoid (Stacke)	Cure
N.	37 "	M	"	R	Ot. Med. Sup. Chronic	Do.	Do.
T.	4 "	F	3 "	L	Ot. Med. Sup. Chronic	Mastoid (Schwartz)	Unknown
B.	9 "	M	4 "	L	Ot. Med. Sup. Chronic	Mastoid (Stacke)	Cure
T.	19 "	M	"	R	Do.	Do.	Do.
T.	24 "	M	6 months	R & L	Ot. Med. Sup. Chronic	Mastoid (Schwartz)	Do.
B.	38 "	M	? years	R & L	Ot. Med. Sup. Chronic	Mastoid (Stacke)	Do.
G.	33 "	M	? "	L	Do.	Do.	Do.
R.	13 "	F	? "	L	Ot. Med. Sup. Chronic	Do.	Do.
R.	12 "	M	3 weeks	L	Ot. Med. Sup. Acute	Mastoid (Schwartz)	Do.
R.	8 mths	F	4 months	L	Ot. Med. Sup. Chronic	Do.	Death
G.	32 years	M	25 years	R	Ot. Med. Sup. Chronic	Mastoid (Stacke)	Cure
H.	18 "	F	"	R	Ot. Med. Sup. Chronic	Do.	Do.
M.	48 "	M	3 months	L	Ot. Med. Sup. Chronic	Do.	Death
B.	30 "	M	20 years	L	Ot. Med. Sup. Chronic	Do.	Cure
S.	2½ "	F	1 "	L	Ot. Med. Sup. Tubercular	Do.	Do.
G.	5 "	M	12 months	R	Do.	Mastoid (Schwartz)	Do.
G.	19 "	F	13 years	R	Ot. Med. Sup. Chronic	Mastoid (Stacke)	Do.

Dr. MACLEOD YEARSLEY. *The Thyroid Treatment of Middle-Ear Disease.*

The natural anxiety which animates all of us in the endeavour to be conversant with the latest methods of treatment predisposes rather to an attitude of mental credulity, which is inimical to an impartial and scientific judgment.

The frequency with which new methods of treatment, from which we had fondly hoped to have arrived at something like finality, although sponsored by persons of unimpeachable scientific respectability, prove on impartial investigation to fall far short of the expectations which had been legitimately raised regarding them, should lead us to adopt a scepticism which, while open to conviction, will not readily yield to mere plausible reasoning.

The sources of fallacy in investigating clinically the action of drugs

are so many and manifold that it is obvious that only a very large series of cases, carefully analyzed, can be of any real and lasting value. The series of cases which I am about to submit is not a large one, but each case has been carefully investigated, and the results at which I have arrived are entirely in opposition to those published by other investigators.

Before proceeding to detail my own cases, I would briefly refer to the published work of Vulpus, Brühl, Eitelberg, and Morpurgo, on the use of thyroïdine in affections of the middle ear. The first of these investigators¹ draws attention to the fact that Kinnicut and M. A. Starr, whilst employing thyroid extract in cases of myxœdema with which hardness of hearing was associated, observed that, with improvement of other symptoms, the hearing was also greatly improved. Vulpus further reported good results in hyperplastic middle-ear processes, especially when there existed limitation of ossicular mobility.

Brühl's paper appeared a few months later.² He employed the drug in tabloids, and gives an account of his investigations upon eighteen patients between the ages of twenty and forty, all of whom were severe cases, and were under continuous treatment and observation. They appear to have been all cases of sclerosis, the duration of disease being from three to thirteen years. The method of treatment was as follows:—During the first week the patient took one tabloid daily, during the second week two, and during the third and fourth weeks three *per diem*. A pause of one to two weeks was then made, and the treatment started again. In none of the sixteen cases were any unpleasant symptoms manifested. Brühl used Burroughs & Wellcome's tabloids, but does not state their strength. I presume they were each equivalent to five grains by weight of healthy gland.

Of Brühl's sixteen cases eight were under treatment for six to eight weeks, and were subjectively and objectively improved. Of the remaining eight two ceased treatment, despite "improvement," in four the result was "satisfactory," in two "very good." The hearing was tested once a week by speech, acoumeter, and tuning fork. The improvement was with the first two tests, there being no apparent alteration in the tuning-fork results.

More recently Eitelberg³ has treated eight cases with thyroid. Block, in his criticism thereon,⁴ remarks: "From the given data it is difficult to say whether they were really cases of sclerosis. Though the results were meagre, the author advises continuation of the experiments."

Lastly Morpurgo⁵ has made trial of thyroid in fourteen cases of deafness, due in eight cases to adhesive processes, in six to sclerosis. All the cases had previously undergone other treatment without success. The dosage was, to start with, ninety centigrammes a day, and was reduced later to a third of that quantity. Headache occurred in two, and

¹ "Archiv. für Ohrenheilkunde," July, 1896.

² "Monatschr. für Ohrenheilkunde," January, 1897.

³ "Archiv. für Ohrenheilkunde," Vol. XLIII., p. 1.

⁴ "Archives of Otology," Vol. XXVII., No. 2.

⁵ "Revue Hebdom. de Laryngol.," April 23, 1898.

marked loss of flesh in four cases. Treatment terminated at the end of three weeks where no improvement had occurred. Nine cases showed no improvement, two had some diminution of tinnitus. In two individuals a marked gain in hearing was experienced.

After reading Brühl's paper I determined to give the treatment a fair trial, and to that end I have used it in twenty-one cases. Vulpius thought it useful when there was limitation of ossicular mobility; and Brühl, remarking that, according to Bauman, the active principle in thyroid is an organic iodine combination, suggests that it is conceivable that the thyroid gland preparations influence the adhesions in the middle ear through the iodine in them, iodine acting as a superior resorbent for pathological connective tissue, such as the remains of chronic inflammation. Bearing this in mind, I did not confine myself to cases of middle-ear sclerosis or adhesive conditions due to catarrhal processes, but endeavoured to test its powers where there was loss of ossicular mobility from other causes.

Of the twenty-one cases, four were males, seventeen were females. The males varied in age from thirty-eight to fifty-five, the females from nineteen to sixty-two.

The duration of disease was as follows:—

				Males.		Females.
1 to 5 years ...	...	...	...	4	...	8
5 to 10 „ ...	...	...	...	0	...	5
20 to 30 „ ...	...	...	...	0	...	1
Indefinite ...	...	...	...	0	...	3

There were fifteen cases of sclerosis (twelve females and three males). Three cases (two females, one male) were suffering from ordinary non-suppurative middle-ear catarrh, with ossicular ankylosis, and the remaining three cases (females) were the subject of ossicular ankylosis due to suppurative disease.

No case (save one to be mentioned hereafter) was put upon thyroid until other methods had been tried, such as the treatment of any nasal or throat condition, inflation, bougies, the chloride of ammonium inhaler, injection of parolein, etc.

The system was carried out precisely upon the same lines as that described by Brühl, and already referred to, the patient being carefully tested by speech, watch, and tuning-fork every week. Eighteen were kept under treatment for from six to eight weeks; one refused to continue after three weeks, and two after one month. These three patients may briefly be dismissed at once. The first, a male, aged forty-one, was the subject of sclerosis of three to four years' duration, who, having already gone through a long course of treatment without benefit, took thyroid for three weeks, and, finding no improvement resulted, refused to continue.

The second, a female, aged fifty-two, duration of disease three years, the subject of non-suppurative middle-ear catarrh, with some impairment of ossicular mobility, had improved in three months from a hearing power for the sixty inch watch of, right, three; left, almost contact; to, right, twenty-four; left, five. She remained in this improved condition

for five weeks, and was then put upon thyroid (all other treatment being abandoned for one month), when she refused to continue, as she steadily retrogressed. Resumption of the former treatment again improved her.

The third case, a man aged fifty-five, duration of disease said to be two years, refused to take thyroid after one month because he had found no benefit therefrom.

It will be noted that in these three cases treatment by thyroid yielded no result.

Before considering the cases of sclerosis, it will be best to take those with loss of ossicular mobility from non-suppurative catarrh or old middle-ear suppuration. Of the former there were three, one of whom has already been mentioned as refusing to continue treatment. The remaining two were a male, aged sixty-two, who improved slightly under other treatment, and reverted to his original condition when the thyroid treatment alone was substituted for six weeks; the other, a female of twenty-five, who, having improved markedly under other treatment, also retrograded when placed upon thyroid. In both cases there was some impairment of the ossicular movements on careful examination with Siegel's pneumatic speculum.

The three cases of ossicular ankylosis from old suppurative middle ear disease are interesting, because two of them were improved afterwards by ossiculectomy. I give brief notes of each case.

1. G. B., aged thirty-six. Right ear had discharged since an attack of scarlet fever at the age of twelve. There was a large perforation involving the lower half of the right tympanic membrane, the handle of the malleus being adherent to the promontory. The left ear was the seat of chronic catarrhal processes, the membrane being indrawn, and the ossicular mobility impaired to the pneumatic speculum. She complained much of troublesome tinnitus in this ear. Hearing power to sixty-inch watch, right, one and a half; left, twelve. Inflation did not improve her. The discharge from the right ear ceased after a short course of ordinary antiseptic treatment. After a long trial of treatment, which did not relieve either deafness or tinnitus, she was put on thyroid tabloids for six weeks. The result was absolutely negative, neither hearing power nor tinnitus improved, nor did the drug have the least effect upon the adhesions in either ear.

2. S. H., aged fifty-seven, had had discharge from both ears "some years" before. The watch was not heard on contact with either ear. Both membranes were the seat of cicatrices, and the handles of both mallei were fixed to their respective promontories. In the right membrane was a cicatrix which was adherent to the inner wall of the tympanum. This case was placed on thyroid for six weeks, without any result whatever, beneficial or otherwise. Later I excised the membrane and ossicles in the right ear, with the result that the hearing on that side improved up to twelve inches for the sixty-inch watch. I intended to operate on the left ear also, but the patient, although pleased with the result in the right ear, did not return for any further treatment. This is the case I have already referred to as having been placed on thyroid without delay.

3. E. S., aged nineteen. Both ears had discharged for from one to two years. In both membranes were perforations involving their inferior halves, the tips of the handles of the mallei being adherent to the promontories. Hearing power for sixty-inch watch, right, two; left, five. After a short course of ordinary antiseptic treatment the discharge ceased, and she was put upon thyroid tabloids for six weeks, without reaping any benefit therefrom. Early this year I excised the ossicles in the right ear, with marked benefit to the hearing.

Passing now to the sclerosis cases, fifteen in number, my experience of thyroid was equally disappointing. As has been mentioned, Kinnicut and Starr stated that they found improvement in the hearing of myxœdema cases under treatment by thyroid extract. I have had under my care only one such case, and my experience was not so fortunate as theirs.

L. P., aged forty-four, the subject of myxœdema, had been deaf for over two years, the right ear being the worse. The onset had been insidious and indefinite. She complained of continuous "singing" tinnitus. She could not hear the watch on contact with either ear. The tuning-fork tests gave results pointing to middle-ear disease, and the bone conduction was slightly imperfect. Both membranes were pale and dull, the left very slightly depressed. There was evidence of old chronic hypertrophic rhinitis, but there was no marked nasal obstruction. Both Eustachian tubes were patent to Politzer's douche, which improved the hearing of the left ear to a quarter of an inch. This case had been on thyroid tabloids for some six months before I saw her. Her myxœdema was, of course, much improved, but her ear trouble was getting slowly and steadily worse. She remained under my treatment for two years, during which time she took the thyroid steadily, save for one brief interval, when the myxœdema but not the deafness began to increase again. This is exactly what one would expect. Thyroid will remedy errors of metabolism, but I know of no case in which it has been proved that the substance has had any effect whatever upon the connective tissue resulting from chronic inflammatory processes. In this case the use of the catheter, combined with occasional injections of parolein, improved her hearing slightly, her tinnitus very much.

Of the remaining fourteen cases of sclerosis, all of which had undergone other treatment before taking the thyroid, in no single one of them did that drug bring about the slightest sign of improvement. One solitary case, a woman aged fifty-one, thought that her hearing power was slightly better, but she was a patient who possessed an amount of faith considerably greater than a grain of mustard seed, and who always tried to look on the best side of things. She volunteered the statement, but the speech, watch, and tuning-fork tests, very carefully applied, did not substantiate her words.

When I commenced the use of thyroid in the treatment of middle-ear conditions I must confess I did not expect any great results, but I endeavoured to enter into the matter with a perfectly open mind. I could not quite see *how* the drug was going to bring about the results which the published papers spoke of and led one to expect from its use.

The only really distinct pathological fact that one could lay hold of was the organic iodine theory of Bauman, and its effect upon the morbid connective tissue of chronic inflammation, and I do not hesitate to say that I was somewhat sceptical as to that. Taking it, however, as a peg upon which one could, partially at least, hang the investigation, I paid special attention to those of my cases in which there was impairment of ossicular mobility, testing each case frequently with pneumatic speculum and probe during the time it was under the treatment. If the organic iodine combination has any real effect upon the pathological connective tissue of adhesions in the middle ear, I think the three cases of old middle-ear suppuration would have been affected by it.

In middle-ear sclerosis my experience is that the thyroid treatment is only worthy to rank with certain other treatments on the score of its being equally disappointing. My colleague, Mr. Richard Lake, informs me that he has used thyroid in several cases in his otological practice, but the results were so disappointing that he has quite given it up.

In conclusion, I feel I have to offer some apology for placing before the meeting an investigation which has not any brilliant results to show, a paper which records a mere unbroken series of failures, in which the conclusions are absolutely negative. My apology must be that in every investigation into a new treatment we ought to show the bad equally with the good, the failures alongside of the successes; provided the workers are sincere and have done their task with equal conscientious care, the work of each should be equally valuable.

I do not for one moment expect this paper to be taken as a final condemnation of the treatment; it would be great presumption on my part were I to do so. Other otologists have tried and spoken well, even eulogistically, of it. I can only say that I have used thyroid as they recommended, exercising due care in doing so, and have found it wanting.

ANNOTATIONS.

A CASE OF INFLAMMATION OF THE MEMBRANA TYMPANI APPARENTLY DUE TO DENTAL PULPITIS.

By PERCY JAKINS, M.D.,

Surgeon to the Central London Throat and Ear Hospital.

THE patient, a girl, aged ten, was first brought to me on the 14th December, 1890, for my advice concerning a somewhat curious accident. She had been playing at the game of "fox and geese," when the girl who took the part of the fox suddenly sprang up from a squatting position and struck her on the mouth with her head with such force as to fracture her two upper central incisors. When I saw her for the first time, twenty-four hours after the accident, the pulps of both teeth were freely

exposed, and I strongly urged the parents to have them treated by a dentist.

This advice was not attended to, and I saw no more of the patient until the 21st of March 1891, when she was brought to me on account of severe neuralgia, to which she had become a martyr, and which had been so severe that for the last three nights she had had no sleep owing to the intensity of the pain. She suffered at the same time from a constant tinnitus, was extremely pale, and seemed quite tired out. On examination of the ears both membranes were found to be intensely congested, and the natural features were almost obliterated. In spite of this the hearing power was not materially diminished, so that any affection of the middle ear corresponding in intensity to the changes in the appearance of the membranes could be excluded.

The patient was therefore suffering from acute myringitis. I felt convinced that its occurrence was brought about by the disease in the damaged teeth, and I considered it advisable that the treatment should at once be carried out for their cure. This was undertaken by Mr. Rose, who drilled out both nerve canals, evacuated a quantity of decomposing matter, and applied antiseptic remedies. The beneficial effect of this treatment was apparent as soon as the following morning; the patient's appearance had then altered enormously for the better, she had had a good night's rest, with complete freedom from pain, the membranes were less inflamed, and in four days had assumed their normal appearance.

The case seems to illustrate forcibly the necessity for recognizing the association between disease of the teeth and that of the ear, of which the former is frequently the exciting cause.

CHRONIC HEADACHE CAUSED BY A CENTIPEDE IN THE NOSE.

By Dr. W. P. MEYJES (Amsterdam).

MISS R., twenty years of age, who had suffered during some months from headache above the right eye, combined with a slight muco-purulent secretion from the right side of the nose, which had not been quite as free as the left side. She considers her complaints to be the result of a "cold," contracted during the spring of 1898. She lives in the country and is employed in farm work. She suffers, too, from a slight chronic conjunctivitis which began some weeks after the headache. On examining the nose, no great alteration was found. In the right cavity the mucous membrane was slightly hyperæmic, and on the middle turbinated bone somewhat hypertrophic. In the left side no such alterations were to be seen.

To lessen the hyperæmia and swelling I ordered menthol with boric acid to snuff up. Some days later the patient called again. After the application of the snuff she had a heavy fit of sneezing and found in her handkerchief a small insect still alive. She put it in some brandy and

took it to me. The insect, which was about seven millimètres long, turned to be a "chilopode" (*centipede*).

The secretion from the right nose soon stopped, and to her great delight the headache was gone. The conjunctivitis, too, disappeared soon afterwards, as I was informed some time later on. It is the second case observed by me where I found headache caused by an insect. In the other case I did not see the insect myself, but made the diagnosis from the description of the patient.

A SIMPLE AND EFFECTIVE METHOD OF COATING A PROBE-TIP WITH CHROMIC ACID.

By RICHARD LAKE, F.R.C.S.

THE use of this acid for the destruction of granulation tissue in the ear, and for the reduction of hypertrophies of the mucous membrane of the inferior turbinate bone, etc., is of such utility that an easy and good way of coating the end of the probe should be of service. The method is one to which I am careful not to apply the word new, though it might be fairly termed unknown. A crystal or two of the acid are picked up on the end of the probe, the probe is now held in the flame of a spirit lamp, so that about half an inch of the end which supports the acid projects beyond the flame. The crystals soon melt, forming a dark brown fluid. When the crystals are entirely melted by the heat the probe is removed from the flame. It is then rotated until the tip is completely covered, and allowed to cool. The end will now be seen completely sheathed by a pink coating of the acid. One avoids the spluttering and annoyance caused by thrusting the crystals into the flame, and at the same time obtains a far more satisfactory result.

SOCIETIES' MEETINGS.

SOCIÉTÉ BELGE D'OTOLOGIE ET DE LARYNGOLOGIE.

("Journ. Med. de Bruxelles," Nos. 27, 28, and 29, 1898.)

BAYER showed two cases of *Tuberculosis of the Larynx*, cured by curettement, and the application of parachlorphenol glycerine; also a case of *Congenital Membrane of the Naso-Pharynx* in a girl sixteen years old. There was a hole of communication between the mouth and nose in the membrane.

DELSAUX showed a case of cure of *Ulceration of the Epiglottis, Vocal Cord, and Aryepiglottic Fold* by lactic acid applications.

DELSTANCHE, Jun., showed a patient who had been cured of *Subdural Abscess*, the result of purulent otitis.

This was a child, fourteen years old, with acute swelling of the mastoid region, following on purulent otitis of five years' standing. Wilde's incision was made, and a fistula communicating with the antrum discovered. Curettement, antiseptic syringing and plugging with iodoform were done. A week later the boy was worse, with involuntary urination, headache, constant crying, paralysis of the left side, but intact sensibility. Temperature nearly 104° Fhr. Probing the wound liberated some pus, which continued to flow, and was fetid. In a few days there was great improvement in the movements of the limbs, and in the cerebral conditions. A week after this cerebral symptoms came on with increased violence; vomiting, profound stupor, and temperature 99° Fhr. Schwartze's operation was practised, but no fistulous opening was discovered, and the dura mater appeared normal. The next day Delstanche, Sen., punctured the membrane, and half a pint of fetid pus came out, containing streptococci. Gradually cure took place, with, however, stenosis of the auditory meatus, the watch not perceived, and Rinné negative.

HENNEBERT showed a case of *Caries of the Temporal Bone* on whom he had operated twice during 1897, but there is now left a large retroauricular cavity, with no tendency to cicatrization, and with bare bone.

HUGUET showed a child three and a half years old suffering from *Paralysis of the Arm*, consecutive to extensive caries of the temporal. Operative procedures have been carried out and sequestra removed, but aphasia supervened, and hemiplegia of the right side, which now limits itself to the arm and hand. The cavity in the bone extends to the vicinity of the carotid canal.

He also showed a child aged five years from whom he has removed a *Fibro-Mucous Polypus of the Left Nasal Fossa*. The finger was introduced into the naso-pharynx under an anæsthetic and the growth removed. It weighed six hundred grains after prolonged immersion in alcohol.

BUYS showed *Pieces of the Petrous Portion and of the Brain near it*, in a state of suppuration. The interest of the case consisted in the unilaterality of the cerebral lesions of one part, and the great extension of the osseous necrosis of the other. Streptococci were found in a pure state by Dr. Pechère. The mischief was due to otitis.

BUYS and LABARKE showed a *Case of Cystic Degeneration of the Tonsil*. In places the tonsil showed structure-like epithelioma, but the plugs of cells ultimately undergo cystic degeneration. It came from a child fourteen years old, who had a rounded swelling pedicled above and partly hiding the soft palate, and near the left tonsil. The whole of the other portion of the left tonsil and the whole of the right one showed swellings pedicled or tending to become pedicled. Yellowish serous fluid came out of the piece when removed with the snare.

DELIE showed *Instruments for the Curettage of the Attic*.

DELSAUX showed a *Foreign Body* which had been in the subglottic

space for six months. It consisted of a splinter of bone, triangular in shape, the front was inserted in the anterior wall of the subglottic space, near the point of attachment of the vocal cords, whilst the posterior angle situated a little to the left of the middle line was under the left arytenoid cartilage. The removal was effected by Schmidt's forceps, aided by pressure of the left forefinger, which rotated the bone, and it was easily removed.

DELSTANCHE, Senr., advocated the use of an *Instrument* similar to that of Bendelack Hewetson for forcing open *Nasal Stenosis*; he has operated on forty-five cases, and is satisfied with the results.

ZAALBERG showed an instrument to keep the lips of the wound separated when operating on the mastoid.

BOLAND and COOSEMANS read a paper on the *Auricular Manifestations in Hysteria*.

They separated them into five groups :—

1. Modification of the acoustic sensibility which is diminished, suppressed, or exaggerated.
2. Modifications of the cutaneous sensibility.
3. Hysterical otalgia.
4. Hysterogenic zones.
5. Hæmorrhages from the ear, generally small and corresponding with menstruation.

They mention the following as the characteristics of hysterical ear troubles :—

(a) Weber, if the deafness is very pronounced, is on the healthy or less affected side.

(b) Rinné is usually positive, unless the deafness is very pronounced or there exists a material lesion.

(c) Auditive acuteness is very variable.

(d) Electric excitability is usually lessened.

(e) Tinnitus exists only where there are material lesions or during attacks.

(f) No vertigo.

GORIS and JAUQUET reported on the surgical treatment of *Ethmoidal Sinusitis*.

GORIS said that the procedure depends on the region affected and the extent of the mischief. If in the posterior part of the ethmoid, galvano-cautery, forceps, and cutting curettes may be sufficient. If, however, the whole of the cells are attacked, and if fistulæ near the orbit are present, other measures are necessary, and prefers extranasal operation.

JAUQUET thinks that we may do a good deal, intranasally, the operation being aseptic.

BUYS read particulars of a case of *Herpes of the Ear*, with considerable nervous phenomena, in a girl seventeen years old, who had diffuse cephalalgia, frequent vomiting, photophobia, constipation, irregular slow pulse, and other meningitic symptoms. She was not delirious, and had no rise of

temperature. This lasted three days, then she complained of much pain, especially over the mastoid, which was intensely tender to touch. There was some congestion of the membrane. Considerable deafness to the voice. Vomiting ceased, and no motor disturbances manifested themselves. Then there appeared vesicles all over the antitragus and lobule, and this gradually spread to other parts of the ear, with amelioration of the head symptoms, and gradually all trouble disappeared. The case is believed to be one of herpes zoster of the auricular branch of the cervical nerve.

DELSAUX had a case of *Abscess of the Vestibule of the Larynx* in a man sixty-two years old, which was opened with a guarded bistoury and cured.

DELSTANCHE mentioned cases of people thirty-six and forty-two years old developing *Adenoids*.

JANQUET had operated on a woman forty-five to fifty years old with *Voluminous Adenoid Growth*.

DELSTANCHE, Senr., and DELSAUX showed a case of *Pseudo-Rhinolith*. It was an osteoma.

HENNEBERT and ROUSSEAUX send particulars of a case of *Pyemia and Phlebitis of the Lateral Sinus and of the Jugular* in a man twenty-two years old. Cured without operation by ice to the mastoid, mercurial and belladonna ointment, and wet applications to the jugular, antiseptic cleansing of the middle ear through the tube, and injection of iodoform vaseline. General treatment; large doses of quinine and champagne.

LOMBARD suggested some modification of the instruments in use in mastoid operations.

NAGUET related a case of *Rupture of the Tympanum* caused by the discharge of a gun.

Barclay J. Baron.

SOCIÉTÉ FRANÇAISE D'OTOLOGIE, DE LARYNGOLOGIE ET DE RHINOLOGIE.

May 2nd, 1898.

E. B. WAGGETT, from the Report in "Arch. Internat. de Laryng., Otol., Rhinol.," May, June, July, August, 1898.

M. LANNOIS, *President, in the Chair*.

REPORT ON THE PATHOLOGY OF THE LINGUAL TONSIL.

M. E. ESCAT (Toulouse). The lingual tonsil, constituted by the lymphatic follicles at the base of the tongue, is well developed in infancy, and at puberty atrophies to such a degree that in the normal adult it is represented by a few scattered follicles; sometimes so few and so small

that the tonsil may be said to have completely atrophied. The pathology follows the lines of that of the palatine and pharyngeal tonsils. The following affections are met with :—

1. Catarrhal tonsillitis, uncomplicated or associated with diffuse angina.

2. Phlegmonous tonsillitis—

(a) Suppurative follicular.

(b) Peritonsillar phlegmon, *i.e.*, suppuration of the fascia forming the floor of the tonsil.

Phlegmonous tonsillitis must be differentiated from intra-muscular glossitis, phlegmon of the floor of the mouth (angina ludovici), phlegmon of the thyro-glosso-epiglottic space, pharyngo-laryngeal phlegmon, sub-maxillary adeno-phlegmon and epiglottic angina.

3. Chronic hypertrophy. This is common, and occurs with equal frequency in both sexes. This condition falls into three clinical groups :

(a) Latent ; no symptoms.

(b) Normal ; accompanied by sensations of foreign body, pharyngeal tenesmus, desire to swallow, slight reflex cough ; nausea, clearing of throat and phonatory disturbance. In singers, hoarseness or changes of register. Sometimes hæmorrhage.

(c) Obscured : revealed by nervous reflexes in predisposed subjects, latent hysterics and neurasthenics, *i.e.*, neuralgias at a distance, asthma, laryngeal ictus, œsophagism, syncopal crises and convulsive tic. These symptoms often cease after local treatment.

4. Atrophy. This is physiological in the adult, and is no sign, as has been maintained, of a syphilitic history.

5. Lacunar tonsillitis. Analogous to the similar lesion in the pharyngeal tonsils.

6. Varicositis at the base of the tongue may give rise to symptoms similar to those of hypertrophy, and also to hæmorrhage.

7. Neuroses of the base of the tongue. Under this head are included various local paræsthesia, including those of the menopause and glosso-dynia of the base. A special psychical condition may be present in such cases, *i.e.*, guttural obsession and cancrophobia, with mental depression amounting to melancholia.

8. Syphilis. One case of chancre is on record ; secondary affections of a hypertrophic character are common, and give rise to dysphagia. Gumma is not rare.

9. Primary tuberculosis has been observed.

10. Lupus and leprosy.

11. Leptothrix mycosis.

12. Benign tumours. The least rare are fibroma, lipoma, and angioma. Rare are papilloma, chondroma, and adenoma.

13. Malignant growth. Sarcoma and carcinoma may remain limited to the base for a long time.

14. Cysts. Glandular and of Bochdalek's canal. Cysts arising from thyroid tissue.

Treatment to be conducted on the same lines as that of similar affec-

tions of the other tonsils. For chronic hypertrophy the galvano-cautery or "morcellement" is recommended. Aconitine crystallized has given results in the neuropathic cases. Perchloride of iron is recommended for mycosis.

Mr. LENNOX BROWNE. The following conclusions were read by M. Luc :—

1. The prevalent ideas adopted with regard to the tissues of Waldeyer's ring are inexact.

2. And particularly so of the lingual tonsil.

3. The development of the lingual tonsil may be contemporaneous with that of the pharyngeal tonsil, although Bickel says that the former develops earlier.

4. The lingual tonsil is not in its most active condition in infancy, nor does it atrophy so early as the pharyngeal and palatine tonsil.

5. This is true both clinically and anatomically. Atrophy in infancy is extremely rare. The hypertrophies and inflammations are only met with in the adult.

Anatomical differences.—(a) The tendency to colloid degeneration and early atrophy noticeable in the pharyngeal is not met with in the lingual tonsil.

(b) Unlike the palatine tonsils, mucous and albuminous glands are met with in the lingual tonsils.

(c) Ciliated epithelium lines the crypts of the lingual, but not of the other tonsils.

(d) The muscular base of the lingual is unlike the osseous and aponeurotic bases of the other tonsils.

(e) The immobility of the tongue in inflammation of the lingual tonsils is due to this anatomical relation.

(f) The distribution of the glosso-pharyngeal nerve explains the pains due to inflammation of the lingual tonsil.

(g) The distribution of the superior laryngeal explains the laryngeal reflexes.

Pathological differences.—(a) The lingual tonsil is rarely affected in childhood, and its atrophy is late. Lesions do not extend to neighbouring structures as in the case of the palatine.

(b) Specific diseases are rarely primary.

It is interesting to note that Læwin described lingual varices in 1863.

DISCUSSION.

M. MOURE did not agree with M. Escat in thinking that these tonsils atrophied at the age of eighteen or twenty. Herpes of the part should be included in the list of affections. Abscess should be opened early for fear of the spread of œdema. The galvano-cautery was the best instrument for this purpose. He advised the transvoid operation for the removal of tumours of the part.

M. GAREL had on one occasion detected the origin of a pseudo-hæmoptysis from a perforated lingual varicosity. Varices were met with chiefly in neurasthenics and the aged.

M. VACHER (d'Orleans) had seen many cases of lacunar lingual tonsillitis.

M. BONAIN (de Brest) made use of a pair of short punch forceps for removing hypertrophies.

M. FURET had seen phlegmon following abscess of the part.

M. NOGUET (Lille) found vocal troubles associated with hypertrophy chiefly among singers, speakers, and those who overtaxed the voice.

M. NOGUET stated that in some cases of malignant tumours very little trouble was occasioned by its presence.

M. DELIE thought that the sensation of foreign body in cases of hypertrophy was due to irritation of the epiglottis.

M. LAVRAND thought too much importance was attached to the sensation of foreign body, its occurrence being too common. Certain nervous influences often cause such marked variations in the condition of these organs that at the moment of examination an hypertrophied lingual tonsil might be so reduced as to appear normal.

Dr. DUNDAS GRANT : M. Escat states that if the veins at the base are not seen it is because the lingual tonsil is hypertrophied. On the contrary, other authors consider the appearance of these veins as evidence of disease. He would be glad to hear M. Escat's opinion on this divergence of views. For his own part he attributed less importance to this sign. The lingual tonsil was prone to alteration under nervous influences. Symptoms were most severe in hypertrophy when the epiglottis constantly rubbed against the enlargement.

M. LERMOYEZ : These cases fall into more than one category. Some have a large lingual tonsil with symptoms which are relieved at one sitting, others have considerable hypertrophy and no symptoms ; others again have no lesion, and yet complain of symptoms. The neuropathic element must always be kept in mind, and often moral treatment will suffice. In the same way large varices may be attended by no symptoms, or symptoms may arrive with the menopause, and disappear when that period is over, though the varices persist.

M. GAREL, in answer to Dr. Dundas Grant, said he had seen not what resembled true hæmoptysis, but rather a repeated rejection of blood-stained saliva, persisting sometimes for two or three years. He had seen perhaps twenty cases. He could not establish the diagnosis from ocular inspection, but arrived at it by treatment.

Mr. LENNOX BROWNE did not know if Læwin employed the term hæmorrhoids, used by the speaker, but he was glad to think that their opinions were in accord.

M. ESCAT : It was difficult to give a precise opinion as to the development of the lingual tonsil. It was not a pathological product as stated by Bar (of Nice). In answer to Dr. Dundas Grant, he had stated that when veins, not varices, were invisible, it was because the overlying mucosa was thickened and the gland hypertrophied.

Statistical Report of Twenty Cases of Chronic Antral Empyema Operated on by my new method.

M. LUC. Speaking of the claim to priority raised in the JOURNAL

OF LARYNGOLOGY, and elsewhere, M. Luc maintains that Scanes Spicer describes an operation in which the canine opening is not closed at the end of operation. Caldwell undoubtedly describes an operation exactly similar to the author's, but unfortunately gives no precise details, and no cases. His name should certainly give title to the operation, but it remained with his hearers to say if the author's name should be coupled with it also.

The following conclusions are the result of a year's work since the last publication.

1. Gauze should be packed below, to catch blood. The incision should be made at the fold.

2. The use of a retractor to hold back the lip and upper flap of wound together. Opening into sinus as large as possible, so as to admit the index finger. The use of gauze strips as swabs.

3. Curettes, bent at an angle, are necessary. Swabbing with one-fifth zinc chloride. Iodoform insufflation.

4. By enlarging the opening downwards and forwards a good view is obtained of the right spot for perforating into the nose. Gauze should be packed into the nose to prevent wounding of the septum, and the second perforation made with chisel and mallet, the mucosa being removed with the bistoury.

5. A gauze strip preferable to a drain tube.

6. Reverdin's needle (curved transversely) and catgut, for suturing the wound.

When using the gauze drain instead of a tube, the author has adopted the following plan for maintaining its absorptive powers for three or four days. The strip is cut long, so that some four inches are free either to hang out of the nose or be packed into the inferior meatus. About every three hours this piece is drawn out of the nose, washed in an antiseptic (formol), dried, and replaced in the nose.

The gauze or drain will be finally removed on the twelfth, fifteenth, or twentieth day at latest.

It is well to wash out the sinus through the nasal breach; all pus formation should have ceased by the fortieth day.

When the ethmoidal cells are affected in conjunction with the frontal sinus, the former should be attacked through a frontal wound, and not from below upwards through the nasal passages.

So frequent is the conjunction of frontal and maxillary empyema (nine of his twenty cases), that the author designates as a pathological entity a fronto-maxillary empyema.

When this is present both sinuses should be operated on at the same sitting, the antrum being dealt with first for fear of re-infecting the freshly curetted surface of the frontal sinus. On one occasion the author reversed this order, and the accident here mentioned occurred with fatal results.

The author repeats the advantages offered by his method of dealing with the antrum, *i.e.*, the absence of communication between the mouth and the cavity, and the assurance of a speedy cessation of pus secretion with an after treatment of very short duration.

The paper concludes with the reports of twenty cases, occupying

thirty-two pages. The eight uncomplicated cases of antral empyema were all cured definitely.

DISCUSSION.

M. LUBET BARBON considered the installation of a drain tube or gauge as unnecessary, and believed that subsequent irrigation through the inferior meatus was harmful. He thought the operations upon the antrum and frontal sinus should take place at an interval of several days.

M. LERMOYEZ thought that efficient drainage was best secured by making a large opening after the removal of the entire inferior turbinate. The frontal sinus and antrum should be dealt with at one sitting to prevent re-infection.

M. CASTEX had seen one recurrence after an apparently successful operation.

M. CARTAZ thought many cases amenable to a less drastic operation. He did not like the gauze drain.

M. MOLINIE had obtained three cures with the operation, which was not followed by syringing, but by injection of ether and iodoform.

M. MOURE believed in removing the inferior turbinate in order to secure a large opening. He maintained the advantage of a drain tube, which prevented the nasal secretions being blown back into the antrum. The antrum and frontal sinus should be treated at the same sitting.

M. GAREL considered that the operation should be withheld until simpler methods had been well tested.

M. TEXIER had seen three spontaneous cures of empyema, and M. Garel also one case.

Dr. DUNDAS GRANT thought the cruciform process, the frequent seat of polypi, should be removed.

M. LERMOYEZ thought the radical operation preferable to months of syringing.

M. LUC stated that the external opening should be made at the point of union of the anterior and internal walls. He was not wedded to the use of gauze as a drain, and thought a large opening into the nose served the essential purpose.

SECOND MEETING, May 3rd.

Hæmatoma, Abscess, and Serous Cyst of the Nasal Septum.

M. J. GAREL (Lyons). The title indicates the three phases through which fluid collections in the septum usually pass, nevertheless cases of abscess and cysts do occur without relation to hæmatoma. The origin is as a rule traumatic, and the lesion commences as hæmatoma, and ends as abscess; but sometimes abscess is the first manifestation, following the injury by several days. In erysipelas, typhus, variola, etc., primary abscess may occur. The author had met with three cases of serous cyst and serous perichondritis. He believed the sequel of external deformity of the nose, by loss of support, to be a rare one. He usually employed puncture with the cautery without the use of an artificial drain.

Apparatus for Photography of the Living Larynx.

M. J. GAREL showed and described some modifications of French's apparatus.

Peri-Auricular Abscess following Furuncles.

M. LANNOIS. Failing to recognize the condition, the author had on one occasion opened the mastoid of a child to find the antrum quite healthy. Diagnosis was not always easy.

M. LAVRAND had two similar experiences in adults.

M. SAUREZ DE MENDOZA related a case of attic disease treated by himself by conservative methods. At another time swelling following furuncles occurred, and was relieved by puncture of the furuncle. At a later date another surgeon, seeing slight attic suppuration, and hearing of the previous peri-auricular swelling, supposed the latter to have been an attack of mastoiditis, and immediately recommended a radical mastoid operation.

Laryngeal Cancer. Thyrotomy.

M. MOURE had had good results, two patients remaining free from recurrence after six and five years respectively. He kept the tampon cannula *in situ* until the third day, and kept in a tracheotomy tube for six months, in order to watch the cicatrix.

DISCUSSION.

M. MOURE, in answer to M. Luc, stated that he employed two separate incisions for the upper and lower wound. The sides of the larynx should be retracted slowly, and not too far, for fear of compressing the pneumogastric.

M. GAREL thought microscopic examination of the growth desirable before thyrotomy was undertaken.

M. ESCAT mentioned the case of a man whose voice was audible at four mètres after total extirpation.

M. MOLL spoke in praise of the endo-laryngeal method.

M. CASTEX considered exploratory thyrotomy an indispensable proceeding. General anæsthesia was attended with danger; he had seen one death therefrom. He dispensed with the tampon cannula, trusting rather to the help of gravitation, when the head was placed low.

M. MOURE thought a preliminary microscopic examination desirable. He found the fresh operative treatment much simplified by the retention of the tampon cannula.

On the Sub-glottic Region. Anatomy and Pathology.

M. CASTEX described the anatomy of the part, referring to the fact that an artificial sub-glottic œdema could be easily produced in the cadaver by sub-mucous injection. After introducing the pathological literature, and some personal cases, the author observed that the most frequent affection was chronic hypertrophic laryngitis with cadaveric position of cords. The principal causative factors were typhoid, erysipelas, tuberculosis, lepra, and scleroma.

Phlegmon of the Inferior Turbinate, with Necrosis of the Bone.

M. DELIE. In this case, the etiology of which was not determined, the necrosed bone was detected by the probe passed through an alveolar fistula. No antral empyema present.

Prolonged Intubation in Croup.

M. BONAIN (Brest) related the case of a child of seven months, in which the tube was introduced on nine occasions for an attack of croup during twenty-two days. The ability to dispense with the tube was gradually attained.

Nasal Insufficiency caused by Undue Prominence of the Anterior Arch of the First Cervical Vertebra.

M. MENDEL described cases illustrating the effects of the deformity, and discussed the desirability of removing adenoids when present. The nasal insufficiency might be expected to abate with the normal growth in size of the pharynx.

Mechanical Vibration applied to the Spine in the Treatment of Sclerosis of the Ear.

Dr. DUNDAS GRANT'S method has been described elsewhere in this Journal.

Chromic Acid for Intranasal Synæchiæ.

M. LAVRAND (Lille) spoke of the fact that when chromic acid was used as a caustic the scars produced prevented the formation of synæchiæ.

Anatomy of the Ethmoidal Cells.

M. MOURET (Montpellier) subdivided the anterior ethmoidal cells into the following independent groups:—

1. The bullar group, opening into the retrobullar groove.
2. The ethmoido-ungual group, opening into the infundibulum and often catching the point of a probe intended for the frontal sinus.
3. The infundibulum.
4. The retroinfundibular cell, opening at the upper end of the retrobullar groove.
5. Another cell between 3 and 4, often small, but sometimes forming a large ethmoido-frontal cell.

The Therapeutics of Laryngeal Tubercle.

M. SARREMONE (Paris) spoke in praise of ablation of the affected tissues, followed by careful and repeated application of lactic acid. Physiological rest was necessary for good results.

Retropharyngeal Abscess with Streptococci in an Infant of Thirteen Months; Employment of Antistreptococci Serum; Cure.

M. BONCHERON (Paris). Not yet reported.

Chancriform Ulcero-Membranous Tonsillitis with Spirillæ and Fusiform Bacilli of Vincent.

MM. RAOULT and THIRY (Nancy) dealt with the condition as already

described by previous authors, and stated that in four out of five such cases examined spirillæ of undetermined species had been found.

A Case of Malformation of the Velum Palati.

M. RAOULT (Nancy) and FINCK showed a very interesting case of presumably congenital malformation. History of throat trouble was wanting, and nothing of the nature of a cicatrix was to be seen. The soft palate was perforated medially by an opening of triangular shape, with the apex terminating at the root of the uvula. The base measured eight millimètres, and the height of the triangle one centimètre. On either side from the root of the uvula a narrow thin band passed upwards and outwards, forming the major part of the sides of the triangle. From the posterior aspect of the root of the uvula a thicker and shorter band passed on either side downwards and outwards to the corresponding posterior faucial pillar. The uvula could be said to be held in position by four bands of tissue—two of them suspensory, and the other two attaching it to the posterior pillars. A good sketch accompanies the paper. The subject was a man of twenty-one, who was able by manœuvring with the tongue to prevent regurgitation of fluid when drinking.

The Cure of Tympanic Perforations with Trichloroacetic Acid and the Galvano-Cautery.

M. MIOT states that he has obtained forty-seven cicatrizations out of fifty-one cases so treated. The perforation should not be one reaching the osseous ring. Cicatrization can be obtained in perforations of very long standing. Radical incision will sometimes aid the process.

AUSTRIAN OTOLOGICAL SOCIETY.

26th April, 1898. ("Monats. für Ohrenheilk.," June, 1898.)

President—Prof. URBANTSCHITSCH.

Dr. HAMMERSCHLAG. *A Case of Peripheral Neuritis from Exposure, involving the Facial, Fifth and Auditory Nerves on the Right Side.*

There was vertigo, rushing sounds in the ear, an eruption of herpes, and some deafness. Bone conduction absent for the watch; shortened for the tuning-fork. Gait unsteady. With closed eyes, walking and turning are extremely difficult. Lachrymation diminished. Taste absent on anterior two-thirds of the tongue on both sides. There is a subjective sensation of altered taste on the right (affected) side of the tongue, and diminished sensibility of the mucous membrane of the cheek and gum on that side. All symptoms improved soon, except the facial paralysis.

Dr. POLLAK inquired about the reaction to galvanism.

Dr. HAMMERSCHLAG said reaction was increased on the affected side. A sensation of sound was produced by cathodal closure with a strength of three milliampères.

Dr. POLLAK said that half a milliampère was sometimes sufficient to produce a sensation of sound.

Dr. KAUFMANN recalled a similar case of his own, in which the auditory paralysis was not cured.

Dr. ALT remarked that increased galvanic excitability was found in most recent affections of the auditory nerve from various causes.

Prof. GRUBER showed (1) a case of the *Radical Operation, in which a large gap behind the ear had been closed by a New Plastic Operation* by Prof. Mossetig.

(2) *A Child of Deaf-Mute Parents.*

The child can hear, but his hearing is more acute for his parents' talk than for normal speech, and he speaks like them. Such children ought to be removed as early as possible from their family surroundings, as otherwise they never learn to speak properly.

(3) *Microscopical Preparations of a Case of Subluxation of the Malleo-Incudal Joint, with Adhesions.*

The temporal bone showed osteoporosis; the incus was rudimentary, and displaced from the malleus by the contraction of fibrous tissue, which stretched to the inner and posterior wall of the tympanum. The malleus was osteoporotic.

Dr. ALT showed a patient *into whose left ear some molten iron splashed* while he was at work as an ironmoulder. The auricle was uninjured, but the meatus was swollen and the membrana tympani completely destroyed. The tympanum was deeply injected. Weber heard to left. Rinné negative, with prolonged bone conduction.

Alt referred to scalding and burning by various hot or caustic liquids. In such cases the membrana tympani suffers much more than the auricle and meatus.

Dr. SINGER showed a case of *Nystagmus following the Radical Operation.*

Certain mechanical stimuli produced the movements, *e.g.*, forcible syringing, especially with cool water. Compression of the air in the meatus caused slow and short horizontal movements. When the region of the horizontal semi-circular canal was touched with a probe the patient felt very dizzy, and made curious rotatory movements, and, at the same time, there was brisk rotatory nystagmus of both eyes. The pupils dilated during the nystagmus, but contracted again directly. (Urban-schitsch's work goes fully into this subject.)

Prof. GRUBER remarked that nystagmus was not at all rare under the circumstances mentioned.

Dr. BIEHL showed (1) a *Soldier whose Deafness was only discovered during his term of service.*

His drums were normal, and the deafness was probably due to old meningitis.

(2) *A Case of Complete Deafness after Influenza,*

The membrana tympani looked almost normal. He was trying pilocarpine.

Prof. POLITZER referred to *the little cleft or fissure which runs from the outer wall of the attic towards the upper wall of the meatus, and which he named the attic cleft.* It contains connective tissue, and often a blood vessel, and is probably the remains of the connection between the pars tympanica and the pars squamosa (tympano-mastoid suture of Gruber). This cleft is often the seat of pathological changes, and may lead to a fistula opening on the upper wall of the meatus. This is important, as fistulæ from the mastoid often open there. In one case a polypus grew through the cleft into the meatus.

Dr. HAMMERSCHLAG showed (1) a *Right Temporal Bone with a very deep Sigmoid Groove.*

It reached to within five millimètres of the external surface of the bone, and only three millimètres of bone separated the groove from the meatus. The radical operation in such a case would involve very free exposure of the sigmoid sinus.

(2) *An Unusually Deep Groove for the Superior Petrosal Sinus.*

It had eroded the superior vertical semi-circular canal.

William Lamb.

SIXTH INTERNATIONAL OTOLOGICAL CONGRESS.

THE Sixth International Otological Congress will be held in London on August 8th, 9th, 10th, 11th, and 12th, 1899. President: Dr. URBAN PRITCHARD, Professor of Otology at King's College, London. The meetings will, by permission, be held at the Examination Hall of the Royal Colleges of Physicians and Surgeons, Victoria Embankment. The subject chosen for special discussion is "Indications for Opening the Mastoid in Chronic Suppurative Otitis Media." A large and influential British Organization Committee has been formed, the Treasurer being Mr. A. E. CUMBERBATCH, 80, Portland Place, London, W., and the Hon. Sec., Mr. CRESSWELL BABER, 46, Brunswick Square, Brighton. The International Otological Congress, which assembles every four years, met last in Florence, where a very successful gathering was held under the Presidency of Professor GRAZZI.

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SOCIETY OF HUNGARIAN EAR AND THROAT SURGEONS

15th October, 1897.

President—Herr V. NAVRATIL.

The PRESIDENT showed (1) *A Case of Septal Deviation and Spine*, in which he slit the nostril with scissors to obtain free access.

Herr BAUMGARTEN contended that the intranasal operation was always sufficient.

(2) A patient with a pale reddish-grey *Lobulated Growth* almost as big as a plum, attached by a broad pedicle below the anterior commissure and freely movable. No thickening of base, and cords moved freely. Thyrotomy was proposed.

Herr BAUMGARTEN agreed, but recommended the transverse incision as giving better access.

Herr POLYAK pointed out the existence of ulceration at the apex of the growth, and inclined to consider it a granuloma, or tubercular, or possibly malignant.

Herr PAUNZ remarked that the so-called "ulceration" was only excoriation, the result of movement during respiration.

Herr BAUMGARTEN showed *A Case of Suppuration of the Ethmoidal Cells with Orbital Abscess.*

Twelve months after an attack of scarlet fever in a girl of ten, a swelling was noticed at the inner angle of the orbit, over the lachrymal bone. In a year it increased to the size of a bean, and was reddened and tender.

On examining the nose the anterior end of the middle turbinal was seen to be enlarged (dilated) to three times its normal size. Part of this shell of bone was removed exposing a cavity full of pus and granulations, which were scraped out. A probe could then be passed upwards, forwards, and outwards, and pressure on the orbital swelling caused creamy pus to exude through the middle turbinal into the nose, and through this channel the abscess was drained. Such cases are rare in children, but occur after scarlet fever and influenza.

Herr POLYAK showed *A Large Piece (2½ by 1 cm.) Removed from the Septum.*

There was great deviation combined with the presence of a ridge which blocked the nostril, and pressed a deep groove in the lower turbinate body. Considerable force was required to extract the piece after it was detached by the saw.

Sitting of 11th November.

The PRESIDENT showed (1) *Large Polypus Removed by Thyrotomy* from patient seen at last sitting. The growth measured 20 mm. by 8-10 mm.

(2) *Multiple Papillomata Removed by Thyrotomy.*

One from under the left cord was as big as a hazel-nut, and blocked the glottis during expiration. Three smaller growths were also removed. The diagnosis in this case was first made sixteen years before.

(3) *A Case of Fibrinous Laryngitis*, showing an irregular triangular patch as big as a sixpence on the right arytenoid. Such cases become more frequent with the sudden onset of cold weather. The circumscribed form is very rare.

DISCUSSION.

Herr NEMAI said that the large tumour in Case 1 did not cause suffocation, probably because of its position under the anterior commissure, its free mobility, and the fact that it had made room for itself to some extent by dilating the trachea, and perhaps the ventricle.

Herr SZENES said he had lately seen several cases of acute otitis of fibrinous character, as shown by microscopic examination of numerous

membranous particles in the discharge. He attributed them to the sudden onset of extreme cold.

The PRESIDENT replied to Herr NEMAI that the polypus in Case 1 lay partly in the ventricle. The interior of the larynx was unusually roomy.

(4) Herr HULTL showed his *Case of Rhinoplastic Operation*.

After some trimming the result was excellent.

(5) Herr VALI. *Epithelioma of the Ear*.

A. S., aged thirty-nine, baker, has had right otorrhœa for five years. Discharge always foetid, in spite of care. Three months ago the pus became blood-stained, and the ear painful. The pain increased and the temporo-maxillary joint became swollen and tender, so that the mouth could not be opened.

The patient now looks ill, and the side of the face is much swollen. Gentle pressure causes foetid bloody pus to flow freely from the meatus. Projecting from the meatus is a cylindrical growth as thick as the little finger. It is greyish-red, granular-looking, hard to the touch, and bleeds readily. A probe passes thirty millimètres along the meatus, and no bare bone can be felt. Mastoid normal, cervical glands swollen, jaw locked. Deafness on the affected side has been gradually increasing for five years, but of late more rapidly. Watch heard on contact. Rinne negative. Weber heard to left. Microscopic examination confirms diagnosis, epithelioma. Sarcoma prefers young persons, and grows more quickly to greater size.

Remarks.—This growth has probably sprung from the tympanum, judging from the absence of disease in the meatus. It is a rare disease, only about twenty cases having been recorded. It may be primary. In this case epidermal cells from the meatus may have spread into the tympanum, or the columnar epithelium of the tympanum may have been converted by irritation into squamous epithelium.

Most cases are preceded for some years by otorrhœa, and the other features of this case are typical. As the disease invades neighbouring parts it produces very various symptoms, and may finally reach the brain, causing meningitis.

Herr KREPUSKA remarked that granulation growths in the meatus readily became covered with epidermis, and when cut parallel to the surface yielded very similar sections to that shown. He recommended the examination of a piece from the deeper part of the growth.

Herr SZENES related the history of two cases of suppurative otitis in which after repeated operations the clinical picture of caries necrotica was soon replaced by that of cancer. He thought the operations had something to do with it.

(6) *Condylomata of Auricle and Meatus*.

On the auricle are a number of confluent spots, raw, slightly raised, and covered with dirty yellowish-grey secretion.

The whole meatus is reddened and infiltrated—at parts raw, and covered with dirty yellowish-grey secretion. Syphilis affects the external ear variously. Secondary eruptions are most frequent, especially maculæ

papules and condylomata. They appear on the surface of the cartilaginous meatus, and the condylomata may cause stricture by their cicatrization. The disease may be mistaken for furuncle and perichondritis, but the condyloma develops slowly and painlessly, and only heals under treatment. In this case the disease appeared two years after the primary sore, and the surrounding skin was inoculated by scratching. *William Lamb.*

3rd February, 1898. ("Monats. für Ohrenheilk.," June, 1898.)

President—Herr v. NAVRATIL.

Herr BAUMGARTEN. *A Case of Bulbar Paralysis.*

A hotel-keeper, aged forty, complained of difficulty in speaking, and of "choking" when he ate and drank. His lips and palate were paretic, and the left half of his tongue was wasted. The epiglottis was erect, and remained so, its depressors being paralysed. The right cord moved very sluggishly, the internal tensors were paretic. Sensibility was reduced, but reflex action and electric excitability were still present. In central paralysis the reflexes are long retained, but finally disappear; in peripheral and toxic paralysis they disappear soon, but return quickly. Central paralyzes are generally bilateral, and the laryngeal condition may suffice for diagnosis. The auditory nerve generally escapes.

Herr BAUMGARTEN. *A Case of Ulcers of the Hard Palate.*

A youth of eighteen complained of hoarseness, and noticed painless nodules on his hard palate. Internal organs normal, cervical glands enlarged. On the hard palate in the middle line is an ulcer as big as a dollar. The edges of the sore are sharply cut and sensitive; the sore itself is not painful. The probe touches periosteum, not bone. No evidence of lupus or tubercle; no history of syphilis. The microscope shows lymphoid infiltration, but no giant cells or bacilli. Iodide and arsenic have been given without result. Several smaller ulcers have appeared lately. The central sore is unchanged, the periosteum intact.

Herr ZWILLINGER thought it was lupus on account of the glands and the crenated outline.

Herr NEMAI said "There is no urgency, wait and see."

Herr POLYAK declined to commit himself, but said the large ulcer reminded him of the "small nodular syphilide" described by Lewin. The position, absence of reaction, and anaesthesia of the sore, support this view. He had seen a similar ulcer on the posterior pharyngeal wall, which Herr Habernern compared to a perforating ulcer of foot. It healed in six months after a long course of iodide.

Herr v. NAVRATIL thought a positive diagnosis impossible.

Herr BAUMGARTEN replied that lupus, syphilis, tubercle, and actinomycosis might be excluded. He suggested lympho-sarcoma. The epiglottis is infiltrated.

Herr VALI showed *Microscopic Sections from his Case of Carcinoma Auris* which confirmed the diagnosis. *William Lamb.*

ABSTRACTS.

DIPHTHERIA.

Donald, W. M.—*Diphtheria Antitoxin as an Immunizing Agent.* "N. Y. Med. Journ.," May 21, 1898.

THE writer is a firm believer in the immunizing property of diphtheria antitoxin; and, though the status of the serum as a curative agent is now beyond question, it requires but the careful employment of the antitoxin to make it as satisfactory a prophylactic. He gives records of several outbreaks to verify his conclusions. The doses given varied from two hundred and fifty to three hundred and five hundred units; and it was found that practically as good results were obtained from the smallest dose as from the largest.

Wachenheim, F. L.—*The Clinical Relations of the Klebs-Loeffler Bacillus.* "N. Y. Med. Journ.," June 18, 1898.

AFTER referring briefly to the views of Bretonneau and Virchow on the nature of diphtheria, the writer gives a short *résumé* of the various tonsillar inflammations from a morphological standpoint. The question whether the so-called pseudo-diphtheria bacillus is to be regarded as a distinct germ or an attenuated form of Loeffler's bacillus is still *sub judice*. Loeffler found his bacillus almost entirely restricted to the outer part of the false membrane. In nurses and others exposed to infection, the Klebs-Loeffler bacillus is very frequently found in the fauces. Many believe the bacillus to be the cause of fibrous rhinitis. Notes of sixteen cases are given, in ten of which the bacilli were demonstrated. A short exposition of the value of the early exhibition of sero-therapy concludes the article.

Walsh, John E.—*Diphtheria.* "N. Y. Med. Journ.," June 18, 1898.

THE writer gives a rather detailed account of the disease in its etiology, varieties, symptoms, and treatment. The organisms producing the different forms are, in the order of severity, (1) staphylococcus pyogenes; (2) streptococcus pyogenes; and (3) Klebs-Loeffler bacillus. For these conditions the author suggests the names "staphylo-angina," "strepto-angina," and "angina Klebs-Loeffler." He gives the technique of cultivation and methods of identification of the Klebs-Loeffler bacillus. Mortality under twelve years, treated with antitoxin, 16'3 per cent.; not treated such, 41'5 per cent.

NOSE, &c.

Bloebaum, F. (Cologne).—*The Treatment of Hypertrophic Rhinitis by Submucous Cauterization with a New Aseptic Galvano-caustic Needle.* "Monats. für Ohrenheilk.," April, 1898.

Two per cent. saline solution is injected into the submucous tissue. This produces artificial œdema and absolute anæsthesia. A glowing needle is then passed through the submucous tissue parallel to the bone, thus burning a long narrow channel, and this is repeated as often as necessary, all the insertions being made parallel to each other.

Galvano-cautery burners may be made aseptic by passing the wires through little insulating blocks of ivory, or horn, or porcelain, instead of using silk thread for this purpose.

William Lamb.

Craig, Robert H.—*Some New Features of the Accessory Cavities of the Nose.* "Lancet," Aug. 20, 1898.

THESE notes are worthy of perusal, but they do not lend themselves to abstracting. They represent some of the anatomic-pathological teachings on the subject in the Vienna school.

StClair Thomson.

Gerber, P. H. (Königsberg).—*Statistical Report of Dr. P. H. Gerber's Poliklinik for Ear, Throat and Nose Diseases in Königsberg, for the Five Years ending December, 1896.* "Monats. für Ohrenheilk.," June, 1898.

TOTAL number of patients, 10,340. The nasal cases numbered 3541, of which—

Empyema of the antrum furnished.....	5'84	per cent.
Catarrh and empyema of frontal sinus	1'04	" "
" " " " ethmoid cells	0'40	" "
" " " " sphenoidal sinus.....	0'08	" "
Hypertrophic rhinitis	16'92	" "
Simple rhinitis	12'62	" "
Fœtid atrophic rhinitis (ozæna)	9'23	" "
Simple atrophic (without fœtor)	7'37	" "

The second decade of life furnishes the largest proportion of nasal cases.

The throat cases (fauces, larynx, and neck) numbered 4697.

Laryngitis (acute, chronic and dry) furnished ...	43'5	per cent. of this total.
Tuberculosis.....	13'3	" " " "
Paralyses, &c.	6'6	" " " "
Neoplasms	4'0	" " " "
Syphilis.....	3'6	" " " "

The third decade is the period of life most subject to laryngeal disease.

Diseases of the fauces and nose affect especially the first two decades.

Ear cases numbered 1416.

The proportion of otitis media suppurativa was very large (29'24 per cent.).

This Gerber attributes to the large number of children amongst his patients.

W. Lamb.

Heerman (Kiel).—*Adenoids and their Frequent Recurrence in the same Individual.* "Therapeutische Monatshefte," No. 8, 1898.

IN Heerman's experience removal of adenoids only relieves the symptoms in sixty per cent. of the cases. In the other forty per cent. the patients return in a short time with the same symptoms. He finds that when these growths recur there is constantly swelling of the turbinates, which has not subsided on their removal. He divides adenoids into two forms—a primary form occurs in children with a tubercular taint, respiration is impeded, and the turbinates become swollen; their removal is followed by restoration of nasal breathing, and the swelling disappears. The other form, which he terms secondary, is due to chronic nasal catarrh, with hypertrophy of the turbinates. Removal of these does not suffice to restore nasal respiration, and they quickly reform. He prevents their recurrence by intra-nasal treatment. He recommends half per cent. solution of cocaine, and insufflation of three parts of sodium soziodol in twelve parts of boracic acid; caustic applications are seldom required.

Guild.

Poole, Wm. H.—*Rhinolith, or Nasal Calculus. A Case, with Pathological Specimen.* "N. Y. Med. Journ.," July 9, 1898.

THE patient, a woman of twenty-four years, suffered from an aggravated form of chronic rhinitis, with headaches and epiphora of the left eye. After careful observation, the calculus was discovered fixed to the posterior end of the outer side of the left inferior meatus, lying in a groove or pocket. Its anterior or loose end was sharp and black in colour. It was mobile. The left-sided epiphora was due to pressure on the corresponding naso-lachrymal canal. The patient made an excellent recovery.

Raoult, A. (Nancy).—*Rhinolith with Cherry-stone Nucleus.* "Revue Méd. de l'Est.," Mar. 1, 1898.

THE patient, a woman, thirty-four years of age, had a cherry stone in her nose, probably from vomiting in childhood. The secretions became fetid and irritating, and the nose completely obstructed. The cause of rhinitis was unknown. Removal of anterior part of inferior turbinate and of rhinolith, having a cherry kernel for nucleus.

A. Cartaz.

Root, Eliza.—*Epileptoid Seizures, apparently due to Nasal Obstruction.* "N. Y. Med. Journ.," May 21, 1898.

THE writer supplies notes of a case suffering for two or three years from the major form of epilepsy. By the merest accident a deflected and ulcerated septum nasi was discovered, with enlarged turbinals and strands of tissue passing across the nasal cavities. After the appropriate treatment the fits entirely disappeared.

Saenger, M. (Magdeburg).—*Abnormal Width of the Nasal Fossæ in Relation to Diseases of the Upper Respiratory Tract.* "Centralblatt für Innere Medicin," No. 11, 1898.

THE author points out that persons with abnormally wide nasal fossæ are predisposed to catarrh of the pharynx and larynx; in these the nasal mucous membrane is anæmic, dry, and often covered with mucous crusts, so that little protection is offered to cold, dry, or dusty air. To overcome this he has had a "nasenobturator" made by H. Middendorf, in Magdeburg. It consists of two plates, which are cut of such a size that the patient can breathe comfortably with the mouth closed; the two plates are connected with a U-shaped spring. The inspiratory diminution of air pressure, and the expiratory increase of air pressure, reach a higher degree by its use; this has a beneficial effect on the circulation, the mucous membrane becomes less anæmic and more succulent, the secretion is increased and becomes more fluid.

Its use is to be recommended to workers in a dusty atmosphere, e.g., stokers, bakers, etc. It is also useful for cyclists and soldiers on the march.

He has seen cases of pharyngitis, laryngitis, and bronchitis cured by its use alone. The chances of micro-organisms being inhaled are also lessened by its use.

Guild.

Seifert (Wurzburg).—*The Relation between Nasal and Ocular Diseases.* "Münchener Med. Woch.," No. 29, 1898.

DISEASE in the nose may produce affections of the eye, directly or reflexly. Examination with the speculum or probe may produce lachrymation and hyperæmia of the conjunctiva. Bright light in photophobia or in errors of refraction may produce violent sneezing. Gruhn reported thirty-eight cases of dacryocystitis, in which nasal disease occurred in thirty-six. Gluck reported forty-eight cases of disease of the lachrymal apparatus, all of which exhibited abnormal nasal conditions.

Winckler, in Bremen, found disease in the nose in fifty per cent. of scrofulous eye affections. In Seifert's experience much better results are obtained when the nose is treated along with the eye. In affections of the lachrymal apparatus, atrophic processes in the nose, with or without fetor, are of great importance, as well as hypertrophy of the inferior turbinate and other causes of obstruction in the meatus.

Adenoids causing obstruction to secretion produce the same results. Eczema of the nares is a frequent cause of eczematous inflammation of the eye. In the majority of cases of *ulcus corneæ serpens* he found rhinitis atrophica fetida. Trachoma has been ascribed to extension from the nose, through the lachrymal duct, to the tarsal conjunctiva. Proof of extension in the reverse way has not yet been brought forward. In rhinoscleroma, changes in the tear duct and eyelids have been described. In the author's experience, extension of lupus by the same way is not so rare as is generally supposed. The tubercular process usually breaks through at the *margo infraorbitalis*. He has never seen this in tuberculous disease of the septum.

Changes in the pupil, photophobia, changes of accommodation, strabismus, narrowing of the visual field, neuritis optica, myopia, asthenopia, symptoms of Basedow's disease due to reflexes, have been described by others. He has not met with these, but in a series of cases saw epiphora and blepharospasmus.

Rhinitis hypertrophica, atrophica simplex et fetida, polypi, empyema, may cause reflex disturbance of the eye. He has seen two cases of ciliar neurosis cured by division of a nasal synechia.

The close connection between the nose and eye is due to the nerve supply. The nasal fossæ are chiefly supplied from the nasal branch of the ophthalmic. This gives off early in its course, where it crosses the optic, two or three small branches, which run along with the ciliary nerves, which meet the short ciliary nerves coming from the ciliary ganglion; they pierce the sclerotic and run forwards between this and the choroid, where they spread out in the ciliary muscle and iris.

Guild.

Spieß, G. (Frankfort-on-Maine).—*Contribution to the Surgery of the Sphenoidal Sinus*. "Archiv. für Laryngol. und Rhinol.," Bd. VII., Heft 1.

In suppuration of the sphenoidal sinus, when it is desirable to make an opening in the anterior wall as close as possible to the floor of the cavity, the author employs a fine trephine, driven by an electric motor. In order to avoid the possibility of entering the cranium he has had an instrument constructed, which is a combination of a sound and trephine. The trephine is of the same pattern as those usually employed in nasal surgery, but much longer. The sound consists of a tube, fitting closely over the trephine, to the distal end of which is fixed a rod, one centimètre long, of the same thickness as a probe. The tube is of such a length that the crown of the trephine cannot be pushed beyond the end of the sound. With such an arrangement it is impossible to injure the posterior wall of the sphenoidal sinus.

The end of the sound is introduced into the sinus, the opening of the tube being below. The trephine is then passed along the tube and bores a hole in the anterior wall. If one opening is insufficient, the sound is made to rest on the lower edge of the perforation, and another is made below. This may be repeated until the floor of the cavity is reached.

The method is also of value in diagnosis.

A. B. Kelly.

Winckler, E. (Bremen).—*The Surgery of the Upper Accessory Cavities of the Nose*. "Archiv. für Laryngol. und Rhinol.," Bd. VII., Heft 1.

In opening the upper accessory cavities of the nose two objects have to be kept

in view, namely, to expose as completely as possible the affected sinuses, and to produce the least possible disfigurement.

The incisions recommended by Grünwald for the ethmoidal and frontal sinuses fulfil the latter requirement satisfactorily, but the former insufficiently. They are of practical value only in providing counter-openings for cleansing. The incision in the corrugator fold is worthy of consideration when the frontal sinus is to be explored.

The operations generally employed in affections of the frontal sinuses are those of Jansen, Kuhnt, and Killian.

Jansen's operation, in which the floor of the frontal sinus is removed and the lamina papyracea perforated in order to clear out the ethmoid, is a risky procedure. The view obtainable can suffice only in certain cases owing to the eyeball. Smaller ethmoids may be made accessible, and in favourable cases even the sphenoidal sinus. When the ethmoids are large and broad, however, only the anterior and middle cells can be scraped. Jansen's method, therefore, so far as the ethmoid is concerned, is applicable only in a limited number of cases.

Kuhnt's method, consisting in the subperiosteal removal of the entire anterior wall of the frontal sinus, has been termed by some "the operation of the future." The procedure is associated with no danger, or technical difficulties, and an excellent view of the cavity is obtained. The cosmetic effect is favourable when the sinus is small, but less so in proportion to its increase in size.

By Killian's method the ethmoid is thoroughly taken into account from a surgical point of view: only the anterior ethmoidal cells, however, are attacked. A suitable communication between the frontal sinus and nose is established which provides good exit for the secretion that continues to be formed, and allows of energetic after-treatment from the nose. A sufficient view of the upper part of the nasal cavity, such as is necessary to clear out the ethmoid, is not obtainable by Killian's temporary resection of the nasal bone; a larger opening is necessary, which can be established if Killian's method is combined with the old one of Roser.

In a unilateral affection of the ethmoid or frontal sinus it suffices to open the nasal cavity by these two methods in order to expose both sinuses, and to render them accessible to treatment. The mode of procedure is as follows:—From the upper boundary of the frontal sinus the soft tissues are divided by a single incision to the point of the nose. The periosteum is pushed aside to show the suture between the frontal and nasal bones: this is separated, and the union of the nasal process of the maxillary bone and the frontal bone chiselled through. The lateral wall of the nose may now be bent over when a view of the upper nasal cavity is afforded, or it may be necessary to notch intranasally the superior maxillary process with a fret saw; the lateral wall may then be broken and bent aside.

With a probe the size of the frontal sinus is investigated; if small, a part of the anterior wall close to the middle line is removed so as to give a view of the cavity. If large, a bony flap, having its base above and to the outer side, may be cut with a circular saw, for which purpose a transverse incision must be made in the eyebrow. After opening the sinus in one or other manner the portion of the floor in which the ostium is situated is directly exposed. The thick part of the nasal spine of the frontal bone is removed with bone forceps or chisel. The entire nasal portion of the inferior wall is taken away. In this way passages are established which admit at least the little finger. The ethmoid is now exposed. This can be gradually cleaned out to the lateral wall and lamina cribrosa, and after the removal of the middle turbinate, the posterior cells and the sphenoidal sinus may be reached. The bleeding is pretty profuse and posterior plugging will be required. If there is

a doubt as to whether all the diseased tissue is removed, or if it is desired to keep the cavity under observation, all may be left open for three or four days.

The frontal sinus must remain open, and can only be closed after a considerable time (six to eight weeks), when the secretion is almost normal. The cosmetic result is good. There is a linear scar in the middle of the nose and forehead, provided the opening in the anterior wall of the frontal sinus was not too large.

If the upper accessory cavities on both sides are affected and demand extra-nasal measures the method of Ollier or of Gussenbauer may be employed.

Ollier's operation, consisting in the turning down of the bony part of the nose, gives a very bad cosmetic result, because the wound must be kept long open, and because a vertical incision is necessary, in addition to the horizontal one over the root of the nose, in order to expose the frontal sinus.

The method proposed by Gussenbauer gives a better view of the upper parts of the nose and causes less disfigurement than Ollier's method. It is specially to be recommended in severe cases of bilateral nasal suppuration in which intranasal treatment produces no improvement, or in which the conditions as to roominess are very unfavourable and interference is urgently demanded.

The incision begins at the inner half of the right eyebrow, runs along the process of the frontal bone to the nasal process of the superior maxilla, then along the edges of the nasal bones, transversely over the nose, and terminates, as on the right side, in the inner half of the eyebrow. The nasal process of the maxilla as far as the orbital margin, then both nasal processes of the frontal bone in continuity with the lachrymal bone, and the lamina papyracea, as well as the adjoining part of the orbital portion of the frontal bone, and, lastly, the perpendicular plate in its connection with the vomer, are divided on both sides. The flap of soft and bony tissues is turned upwards and the field of operation is thoroughly exposed.

This operation may be modified in various ways, according as it is desired to open both frontal sinuses and the anterior ethmoidal cells, or the frontal sinuses and the entire ethmoid, or, in addition, the anterior wall of the sphenoidal sinus.

The two sinuses having been exposed in the manner just detailed, all ridges and projections are removed, and the two are thrown into a single smooth cavity. As much of the floor of the frontal sinuses as belongs to the nose is removed. The ethmoidal cells can now be cleared out, and after removal of the middle turbinate the sphenoidal sinus can be reached.

The one large cavity formed by the union of all these is now stuffed with a long strip of gauze, the end of which is passed into the inferior meatus if the external wound is to be closed at once. The subsequent treatment, after removal of the tampon, consists in thorough irrigation three or four times a day.

Patients who have been operated upon as above described will be troubled with the formation of crusts in the nose. There will be no alteration in the resonance of the voice.

These operations are indicated only in very severe cases of suppuration in several cavities. The author has performed Gussenbauer's operation twice on account of orbital cellulitis with fever, cerebral symptoms, etc. He has also employed the other methods referred to above.

A. B. Kelly.

Zarniko (Hamburg).—*Miscellanea Rhinologica*. "Monats. für Ohrenheilk.," May, 1898.

THE author replies to Schech's criticisms on his method of sterilizing instruments, as set forth in his book on diseases of the nose. The instruments are taken to pieces, brushed with soap and water, boiled for five minutes in one per cent. soda solution, washed in boiled water, and dried with a sterilized cloth. Very delicate

parts are dried by dipping in alcohol. Schech is content with thorough brushing with soap and water, followed by washing in five per cent. carbolic. He refers to his twenty-five years' entirely successful experience of this method.

William Lamb.

LARYNX.

Avellis, Georg (Frankfurt).—*What is the so-called Inspiratory Stridor of Infants?* (Congress of South German Laryngologists, May, 1898.) "Munchener Med. Woch.," Nos. 30 and 31, 1898.

THE symptoms of this affection are constant inspiratory stridor, which lasts for months and varies in degree from time to time. There is drawing in of the episternal notch and ribs. Fever cough and hoarseness are absent: the larynx shows no visible changes; the child thrives and is well nourished. Over the etiology many diverse views have been given. Lori was the first to give an explanation of these cases. He states that the vocal cords come quickly together towards the end of inspiration, that the rima glottidis is closed for a moment, and that the cords go apart again in expiration.

Thomson has described five cases, which McBride examined laryngoscopically without definite results. Thomson ascribes the condition to a neurosis of co-ordination, and considers the noise to originate in the larynx. Satisfactory examination is difficult. Avellis could see neither œdema nor inflammation in the arynx; the free edges of the epiglottis were not drawn together.

Lack and Sutherland described two cases, where the epiglottis was infolded and the aryepiglottidean folds approximated during inspiration. As age advanced the larynx developed further, and the symptoms disappeared; the formation of the epiglottis remained the same. The stridor lasts during the whole of inspiration, and could not be caused by momentary closure of the vocal cords. Avellis suggests that the stridor may be tracheal and caused by pressure of the thymus. In 1852, Billiet observed a moist, gurgling tracheal stertor in children of seven to ten months old, which only disappeared momentarily when the children were quiet. He considered it due to irritation or swelling of the tracheal mucous membrane.

Siegel described a case where tracheotomy was done without benefit, and the stridor was only overcome by introducing a long tube into the trachea. The thymus was brought forward and stitched to the external fascia; the tube was removed, and the stridor ceased. Gloichler has seen three cases where, in long-standing dyspnoea, the cause of death was an enlarged thymus. The clinical symptoms in these cases were the same. In favour of tracheal stenosis are the age of the child, the frequent spontaneous recovery in the second year, congenital occurrence, the mode of recovery (stridor recurs on movement), temporary cessation when the position of the body is changed, negative laryngeal appearances, the high position of the larynx, the entrance of air being greater into one bronchus than the other, and operative results. It is possible that stenosis might also be caused by enlarged bronchial glands. To clear up this, further investigation, which might be helped by Roentgen rays, is required.

In the discussion which followed, Pröbsting agreed that thymus hypertrophy was the cause of the stridor. He has seen preparations in which the cause of the stridor was proved to be compression of the lower part of the trachea at the bifurcation.

Killian obtained such a good direct tracheoscopy in a child two years of age

he found no change in the air passage, and thought he could exclude pressure from a thyroid or thymus gland.

Guild.

Besold, Gustav.—*Laryngeal Phthisis in Cases of Phthisis Pulmonalis.* "Munchener Med. Woch.," No. 26, 1898.

THE author examined three hundred and forty-six new cases received into the Falkenstein sanatorium in Taunus; sixty-nine showed certain signs of laryngeal tuberculosis such as ulcers and tumours; twenty-four were suspicious, *i.e.*, they exhibited unilateral swelling and hyperemia, slight ulceration as paresis of one cord. Of these sixty-nine, fifty were men, and in thirty-eight the disease was of a severe type. Treatment may have a curative effect or it may limit the progress of the disease. To insure rest he forbids both speaking and whispering. Cough should be controlled as much as possible. Appropriate treatment should be applied to nose and pharynx, if necessary, as catarrh may be the cause. Cough due to tracheal ulceration may be overcome with injections of morphia. Where there is dysphagia he has found orthoform the best drug, and now uses it to the exclusion of morphia. In laryngeal treatment he uses powders of iodol or orthoform, of fluid applications menthol in oil is the best, lactic acid should be used strong, and only applied locally to ulcers, if this is not sufficient the curette is applied. Of the sixty-nine cases of certain laryngeal disease, twenty-two were cured, and twenty-six improved. He considers those cases cured where the ulceration has cicatrized, or where infiltration has almost or quite disappeared; eleven were seen two to four months, ten were seen six to eighteen months afterwards; the other one died of hemoptyses.

Better results are to be expected in sanatoria as the patients are under more favourable conditions for treatment.

Guild.

Bottoms, F. A.—*Treatment of Hoarseness in Singers and Speakers.* "N. Y. Med. Journ.," July 2, 1898.

THE first indication is to relieve the local laryngeal congestion; and this the writer does by rest in bed, a hot mustard foot-bath, calmol (gr. x.) to the robust, aconite pushed to its physiological effects, and an ice-bag or Leiter's coil to the larynx. During this treatment the patient must refrain from using his voice. In twelve, or, at most, twenty-four hours, the larynx should show a decided improvement, and the line of treatment is now altered to a distinctly tonic character. Before the patient gets up, an alcoholic bath and a brisk rubbing should be ordered, and then a strong tonic given—preferably, tinct. ferr. mur., in three-grain doses in glycerine in water, after meals, and continued in diminishing doses till recovery. Topical applications may now be employed, as Argent. nitr. (gr. x. ad. ʒi.), preferably as spray. The patient may now be allowed to use his voice, but very gradually—commencing in the middle register, and, by degrees, working up and down the scale.

The sudden accumulation of mucous upon or between the vocal cords produces a temporary hoarseness very annoying. For this, deep inhalations of menthol in alboline, before using the voice, are very effective.

Temporary paralysis of the cords (not dependent on pressure) usually yields to Faradism externally and strychnine internally.

Codd.—*The Utility of Intubation of the Larynx.* "Birmingham Med. Review," Aug. and Sept., 1898.

TWENTY-SIX cases of diphtheria were intubated, of whom fourteen died and twelve recovered. The operator considers that intubation is a better operation than tracheotomy, because it is bloodless, requires no anæsthetic, is not so likely

to be followed by chest troubles, the cough is much more explosive and efficient, and no skilled nursing is required. In chronic stenosis it is invaluable, it being the only efficient method of permanently curing chronic strictures. *B. J. Baron.*

Gorodecki, H. (Kischenew).—*A Case of Foreign Body in the Trachea.* "Monats. für Ohrenheilk.," May, 1898.

A GIRL of fifteen swallowed a button and concealed the fact, for fear of punishment; so that the cause of her illness was unsuspected till she confessed, a fortnight afterwards. She had great dyspnoea, with well-marked laryngeal stridor. The laryngoscope showed a dark body, lodged in the trachea about one centimètre below the cords. The cricoid and upper tracheal rings were divided, and the edges held apart with hooks; but the body had changed its position, and could not be found. A tube was introduced, and the wound partly closed. Five days later, while search was being made for the foreign body, it was suddenly coughed up into view, and a few more vigorous coughs brought it within reach. It proved to be a horn button, twelve millimètres in diameter. *William Lamb.*

Grimes, L. A.—*Membranous Tracheitis and Laryngitis without the Presence of Diphtheritic Bacilli.* "Lancet," Aug. 13, 1898.

A BOY, aged four years and nine months, who was recovering from an attack of measles, was admitted on May 18th, 1898, with marked stridor and great sucking in of the episternal notch and of the lower thorax during inspiration. On examination nothing abnormal was found beyond slight injection of the tonsils. The symptoms becoming rapidly worse and the child being in great distress, tracheotomy was performed within half an hour of admission. Immediately the tube was inserted a large piece of membrane was coughed up. This membrane was of a greyish-yellow colour, and very tough. Dr. Ewart's method of introducing creasoted oil (one in twenty) into the trachea was at once adopted. Five minims every two hours had the effect of softening the membrane, thus enabling the child to cough it up more easily, and a fit of coughing was usually brought on immediately the oil reached the trachea. After twenty-four hours the dose was altered to ten minims every four hours. In two days the membrane became quite soft and muco-purulent looking. Bacteriological examinations were made by Dr. Slater on the first day and on three other occasions, but, though there were numerous bacilli, that of diphtheria was always absent. The membrane became gradually less from day to day, and the tube was finally removed on the twelfth day. The child made an uninterrupted recovery, and was discharged within the month. *St Clair Thomson.*

Rosenberg, A. (Berlin).—*A Form of Pachydermia Laryngis ("Laryngitis Desquamativa").* "Monats. für Ohrenheilk.," June, 1895.

A MUSICIAN, of sixty-five, had been hoarse for a year. His left vocal cord was reddened, thickened, and had lost its sharp edge. On its anterior part were two snow-white nodular elevations about the size of a pea, raised about .5 millimètre above the surface of the cord. The two nodules joined on the upper surface of the cord: its mobility was unimpaired. When removed the white nodules were found to consist of epithelium, the upper layers of which were hardened and horny. Two and a half years later the cord was still red, and showed a white, irregular linear growth, forming a sort of ring on the cord. Inside the white ring one could see the reddened mucous membrane. The process is essentially one of epithelial out-growth from chronically inflamed mucous membrane. The superficial cells become horny.

In Von Stein's case the cells were arranged like the tiles on a roof, and the

growth had an irregularly serrated edge, like the comb of a cock. Pieces crumbled away from time to time, showing reddened mucous membrane beneath.

William Lamb.

Shirley, E. L.—*A Case of Epithelioma of the Larynx. Laryngectomy and Partial Pharyngectomy. Death on the Eleventh Day from Exhaustion.*

"N. Y. Med. Journ.," July 16, 1898.

DETAILS of the operation are given; and a summary of the subsequent history of the case would indicate that exhaustion was the chief factor in the fatal issue, and not pneumonia or septicæmia—the usual sequelæ of such operations when not followed by immediate death from shock or hæmorrhage.

Toeplitz, Max.—*Mycosis Pharyngis Leptotricia.* "N. Y. Med. Journ.,"

June 25, 1898.

THE writer gives the varieties, clinical appearances, and differential diagnosis of this affection, and lays some stress on the fact that it may readily follow an acute follicular tonsillitis, or diphtheria. Many remedies have been used with varying success, and, in the writer's hands, the sharp spoon and galvano-cautery were very effective. An extensive bibliography of the subject is appended.

Wright, Jonathan.—*Some Critical and Desultory Remarks on Recent Laryngological Literature.* "N. Y. Med. Journ.," June 4, 1898.

THE writer supplies a pretty exhaustive article, giving a *résumé* of the more important papers on the subjects.

THYROID.

Goris.—*Operation in a Peritracheal and Retrosternal Goitre in Extremes. Cure.*

"Ann. de la Soc. Belge de Chirurgie," Aug. 15, 1898.

THE case was that of a girl, nineteen years of age, who had had a goitre since she was four years old. The tumour was enormous, and before operation she was nearly dead, the trachea being flattened. Tracheotomy and removal of the growth, leaving only a piece the size of a plum, saved her.

B. J. Baron.

Kocher, Theodor (Bern).—*A New Series of Six Hundred Operations for Goitre.*

"Correspondenz-blatt für Schweizer Aerzte," 1898, No. 18.

THIS series includes the operations for goitre undertaken in Kocher's clinique during the last three and a half years, and follows a series of one thousand operations published by him in 1895. Thyroid treatment has not accomplished more than iodine treatment. He finds that ninety per cent of goîtres are so far improved by medical treatment that operation is not required.

Indications for operation are where medical treatment has proved useless; where there are developments of large isolated nodules, in every form of cystic formation; and where there is the slightest suspicion of malignant disease. The chief indication is difficulty in breathing; where this occurs operation is the only treatment. For the past two years the author has used, almost exclusively, one per cent. cocaine, and prefers it to general anæsthesia in complicated cases. In Basedow's disease, and where there is tracheal stenosis, breathing is quieter, venous hæmorrhage is less, and patient can phonate, which lessens the risk of the recurrent nerve being injured; otherwise, the operative procedure is the same.

He draws special attention to a condition which he terms "thyreoptosis." The larynx is comparatively low, and only the upper tracheal ring covered by the isthmus is palpable over the incisura sterni. The whole lower corner of the thyroid lies within the thorax; when this enlarges, a struma profunda or intrathoracica, without enlargement in the neck, develops. It is characterized by dulness over the manubrium sterni and first intercostal spaces, and must be looked for in unexplained asthmatic attacks or dyspnoea where examination of the larynx and chest is negative. If small, there may be no dulness, and, owing to its position, severe symptoms may be caused. An attempt may be made to map out the thyroid lobes by palpation; when this can be done on one side only, one may be nearly certain that the lower corner is in the thorax. If it is not fixed, it may be protruded on coughing. There is also a form of thyreoptosis where the position of the larynx is normal; where the thyroid is enlarged and movable on deep inspiration, certain parts may be drawn into the thorax. Development of even small nodules cause dyspnoea. Operation should be done before adhesions form.

Amongst five hundred and fifty-six cases of a colloid and cystic nature, only one death due to chloroform occurred. The author considers that, with cocaine and aseptic treatment, operation is absolutely safe. Many of these cases were in weak individuals with marked respiratory and circulatory disturbance.

Six out of eighteen malignant cases died, due to severe, complicated resections, which involved important structures.

Two out of fifteen cases of Basedow's disease died—one due to pneumonia, the other to accelerated action of the heart.

Two deaths occurred in eleven cases of strumitis—one due to tetany, the other to suppuration in a case which had been tapped elsewhere. *Guild.*

E A R.

Starr, F. N. G. (Toronto).—*Epithelioma of the External Ear*. "Canadian Journ. of Med. Surg.," July, 1898.

THE history of two cases are given. First: Male, aged fifty-eight. The cancer had formed in the middle of the outer edge of the helix; it was thickened and ulcerated, presenting everted edges. There was no pain. The operation was V-shaped, pointing down to the bottom of the concha. Two silkworm gut sutures drew the deep cartilages together, and a continuous horsehair suture closed the wound. Union was rapid. One year later there was no recurrence. Second: This case was under the care of Mr. J. H. Cameron; Dr. Starr assisted in the operation. It occurred a week after the first case. In this one, the growth affected the base of the lobule, extending into the fossa of the antihelix, and involving the anti-tragus. This also was unattended by pain. It was removed, and the lobule sutured to the remaining part of the prima. A good recovery ensued, but the case was not traced any farther. *Price Brown.*

Stillson, J. O. — *Mastoidectomy involving Lateral Sinus Complications*. "Laryngoscope," June, 1898.

IN this interesting paper the writer records the histories of three cases, in two of which operation followed by recovery took place. In the third operation was refused, and death took place.

In the first case there had been repeated aural abscesses. Two mastoid opera-

tions had taken place. Subsequently necrosis over the sigmoid sinus ensued. A third operation was undertaken, in which the tegmentum of the attic was completely removed. In this case the jugular was not ligated.

In the second case—a case of aural abscess—paracentesis was performed, followed, however, by cessation of discharge and involvement of the lateral sinus. Operation was suggested, but was declined.

In the third case an otitic cerebral abscess was diagnosed and opened, the mastoid at the same time being cleared out and a clot removed from the jugular vein. Recovery took place.

The author sums up his observations by saying that “a bolder and more radical surgery in the light of modern antiseptic measures is destined to replace the former timid conservatism which has cost so many lives. The lateral sinus presents no greater difficulties to operative interference than many other portions of the brain. It should be opened when a clot can be demonstrated with reasonable certainty to exist, and without hesitation when pus is known to be present.

“Ligation of the jugular should be done in certain cases, not for the sake of facilitating the operation, but as a means of preventing at least one source of general infection and sepsis. Like every other valuable surgical procedure, it should be done in time to give the patient the benefit of its value. Procrastination adds to the dangers and diminishes proportionately the hopes for cure which the operation offers.”

W. Milligan.

Thomas and Lartail.—*Cholesteatoma; Cerebral Abscess; Operations; Death.*

“Rev. Hebdom. de Lar.,” Feb. 25, 1898.

THE case of a boy of seventeen, with pain in the left ear of eight days’ duration.

History.—Pain in the left ear from time to time. Otorrhœa on the right side since childhood.

State.—August 27th. Axillary temperature, 39°; pulse, 68. Painful stiffness of the neck. Fixed headache in the frontal and left occipital regions. Mind clear. No paralysis. Dilatation of the veins of both optic discs. Mastoid region apparently healthy. Tympanic membrane natural in position and colour, with the exception of the postero-superior region, where a small granulation was to be seen.

Treatment.—After cocaineization the granulation was removed and the posterior half of the membrane removed. Syringing brought away some *débris* of a cholesteatomatous character.

August 28th. State unchanged, and the diagnosis of cerebral abscess made.

August 29th. Commencement of facial paralysis.

September 1st. Fall of temperature to 36°-37°.

September 7th. The lateral sinus, occupying the centre of the mastoid region, opened and packed. A cholesteatoma, the size of a nut kernel, removed from the aditus. Curettement without perforation of the cranium. Chiselling of the anterior attic wall, which was eburnated, and removal from that cavity of a second cholesteatoma, the size of a nut. The roof of the attic trephined laying bare a square centimètre of dura mater which appeared normal. Incision of the dura and escape of cerebro-spinal fluid. Resection of the superior wall of the cartilaginous meatus.

September 10th. Less headache and stiffness of neck.

September 14th. First dressing of the wound. Some vomiting.

September 17th. The cranial opening enlarged anteriorly to the central point of the tegmen tympani. Granulations discovered which had reached the inner table through a small perforation.

September 22nd. Absence of pressure symptoms.

October 6th. Return of pressure symptoms. The exposed dura was freely

incised and the brain appeared normal. Luc's bistouri was passed, to the depth of three centimètres, upwards, forwards and backwards, into the temporo-sphenoidal lobe, but no pus was detected. Cessation of pressure symptoms and pain.

October 10th. No vomiting, but hiccough after food. Respiration slow; pulse rapid, with attacks of tachycardia. Commencement of pneumogastric compression.

October 12th. Temperature, 36.5° ; pulse, 120; respiration, 14.

October 15th. A fit, which ceased abruptly on the discharge of a quantity of cerebro-spinal fluid.

October 16th. Appearance of a hernia cerebri, the size of a chestnut, filling the upper part of the operation wound.

October 17th. Return of occipital pain.

October 20th. Increase of pain. Mind clear.

At the patient's desire he was placed on the night-stool, and at the first effort suddenly carried his hand to the left occipital region, cried out with pain, and fell dead. Bursting of the abscess and inundation of the medullary region.

No *post-mortem* examination was allowed. The author supposes the abscess to have been in the occipital lobe.

Waggett.

REVIEWS.

Holmes.—*Benjamin Brodie* (Masters of Medicine). By TIMOTHY HOLMES.

Price 3s. 6d. T. Fisher Unwin, 11, Paternoster Buildings, London, E.C.

It is, we trust, not needful to remind our readers that this is the fifth number of the series. The four already gone, or, rather, come, have left a craving for more, and we turn to this volume with high hopes.

We are sorry that we omitted to tell both our readers and thank the publisher that the last two issued had needed less paper-knife, this one none, for which we are grateful.

Brodie is another example of the eminence to which the Scotch have so frequently risen outside their native land as well as within, a fact amply exemplified by the earlier numbers of this series.

He, like his countryman Hunter, became attached to St. George's Hospital, and, like him, saw and determined to obviate, the inefficiency of the teaching as then carried out; his methods, and to what an extent he succeeded, we must leave the reader to find out for himself.

Brodie was admitted a F.R.S. in March, 1810, at the early age of twenty-seven, and, as Mr. Holmes most truly says, most of his after life becomes the history of his work at the Royal Society. His varied attainments, noble character, and great success are told in the clear and forcible style possessed in so marked a degree by the editor.

The Journal of Tropical Medicine. A Monthly Journal. 17s. per annum.

Edited by J. CAULLIE and W. J. SIMPSON. Published by J. Bale, 83, Great Titchfield Street, London.

THIS journal will be welcomed by many, to give us an insight into the changes which occur in the blood in malaria and in quinine poisoning, and such like general topics, which have a direct bearing on otology.

NEW INSTRUMENTS.

CUTTING FORCEPS FOR USE IN THE TREATMENT OF LARYNGEAL
PHTHISIS.

THE forceps, whose cutting end is depicted in Fig. 1, were referred to in our May number, page 266, the circle being the exact size of a piece of paper cut out by the instrument. Figs. 2 and 3 represent an instrument which is made for removing

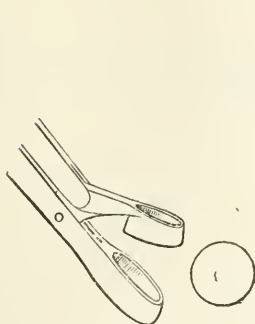


FIG. 1.

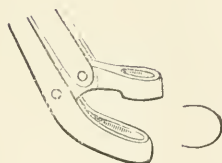


FIG. 3.

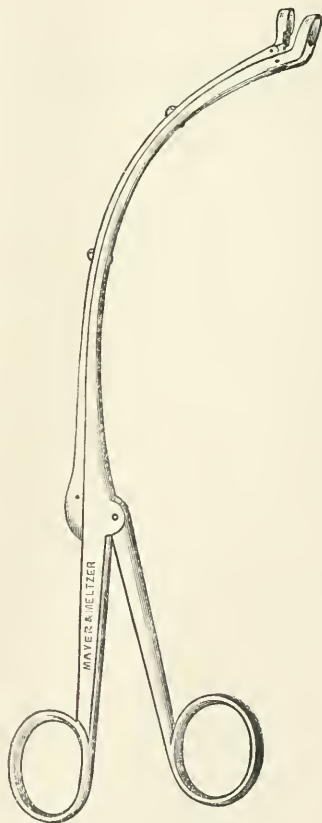


FIG. 2.

superabundant tissue from the inter-arytenoid region, with a drawing of the end and of the sized piece capable of removal; both the latter full size. These forceps are of strong build, and will cut through dense tissue or cartilage with the greatest ease. This is a point of considerable practical importance in laryngeal surgery, and one often has to regret the weakness of tube forceps in punching out

pieces of the glottic rima. The anterior-posterior cutting forceps will be found useful in removing tissue from practically every part of the rima, including the epiglottis, and no tissue will be found too dense. The downward cutting ones are for removal of those warty intra-arytenoid masses so hard to remove with any other instrument. They cut a little obliquely to suit the normal slope of the inter-arytenoid fold. These instruments are made by Messrs. MAYER and MELTZER, of 71, Great Portland Street.

Richard Lake.

NOTICE.

THE LONDON LARYNGOLOGICAL SOCIETY will meet on the first Friday in the month, for the next calendar year, at 5 p.m.



DR. HANS WILHELM MEYER.

BORN 1824. DIED 1895.

(Reproduced by kind permission of the Editor from "The Practitioner," November, 1895.)



THE WILHELM MEYER MEMORIAL.

THE
JOURNAL OF LARYNGOLOGY,
RHINOLOGY, AND OTOTOLOGY.

Original Articles are accepted by the Editors of this Journal on the condition that they have not previously been published elsewhere.

Twenty-five reprints are allowed each author. If more are required it is requested that this be stated when the article is first forwarded to this Journal. Such extra reprints will be charged to the author.

The Editors are not responsible for opinions expressed in original Articles or Abstracts in this Journal.

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**UNVEILING THE WILHELM MEYER MEMORIAL AT
COPENHAGEN,**

OCTOBER 25TH, 1898.

IT had been our intention to publish a full report of the ceremony, but pressure of matter has obliged us most unwillingly to confine ourselves to a full report of Sir Felix Semon's speech. We are able to present our readers with a good print of Meyer, as well as a print of the memorial.

SIR FELIX SEMON'S SPEECH.

Mr. Mayor, Ladies, and Gentlemen,—The Executive Committee of the Wilhelm Meyer Memorial have delegated to me the signal honour to hand over the monument, erected by international subscriptions in his honour, to the care of the Copenhagen municipality. In fulfilling this pleasing task I much regret my inability to address you in the Danish tongue, and for this reason alone I must not trespass long upon your patience. At the same time this occasion is such a very unusual one that I may be permitted to say a few words pointing out its meaning and importance.

We are assembled here to-day to unveil a monument erected in honour of the late Dr. Hans Wilhelm Meyer. A monument in honour of a physician—that in itself is a very uncommon thing. To be immortalized by the sculptor's art in bronze or marble in a public place has usually been reserved, from times of old, to some few classes of the community only. Great rulers, benevolent or warrior princes, distinguished statesmen, victorious generals and admirals—these are the privileged mortals in honour of whom most frequently monuments have been erected; more rarely has such a reward fallen to the lot of great artists, poets, painters,

musicians, sculptors ; still less frequently have men of science, philosophers, law-givers, inventors, and other leaders of intellect thus been distinguished ; few and far between are monuments erected in honour of members of the medical profession. Nor is the reason of this far to seek. Slowly, and by labour of many, is the edifice of scientific medicine being erected. The brain work of the lifetime of a physician usually means hardly a single brick in this ever-growing structure. Even if of uncommon importance, his achievements rarely pass outside a comparatively narrow circle within his own profession ; not often is his fame of a really universal character amongst his own compeers ; still less frequently does it appeal to the imagination, to the gratitude of the community at large. Thus the ordinary fate of the scientific physician, even if in his day he has been successful in promoting, by teaching and writing, the welfare of mankind, as a rule is not of a largely resplendent character. A few complimentary obituary notices, the grateful recollection of some friends and pupils, not, as a rule, lasting longer than into the immediately following generation, finally a resting place for his name in those corners of medical literature in the development of which he has been most active—this is the summary of the life-work of most leaders of the medical profession.

What, then, has been the conspicuous merit of Hans Wilhelm Meyer that he should have been singled out for so unusual an honour as the one which is going to be paid to his memory to-day ? The answer is easily given. It is now just thirty-one years since he was one day consulted by a girl, aged twenty, who suffered from deafness, whose voice was most peculiar, and the expression of whose face was almost idiotic. Treatment directed to the ears and to the throat failed, and it was not until the puzzled observer one day introduced his finger into the space between the nose and throat than an unexpected solution was met with. Instead of penetrating into an open cavity, the finger was arrested by a large, soft, easily bleeding mass, a condition the existence and nature of which in those days formed a *terra incognita*. Meyer succeeded in removing this mass by operation, with the result that the deafness was materially improved, the voice became natural, and the idiotic expression of the face disappeared.

Gratifying as this result was in itself, it was, however, only then that Meyer's real merit commenced. Schopenhauer has truly said that not he is finder of a thing who lifts it from the ground and drops it again, but he who takes it up, and, recognizing its value, keeps it. If Meyer had regarded his experience in the light of a mere pathological curiosity, again years and years might have passed before the importance of the subject was realized. But with the true instinct of the scientific observer who develops what is ultimately to become an important truth from small beginnings, Meyer did not drop the clue which a casual observation had placed in his hands. He began studying the subject in all its bearings ; he examined the masses he had removed with regard to their structure, and finding them to be glandular in character, gave them the name of "adenoid vegetations" ; he investigated the results which obstruction of the space between the nose and throat exercises upon hearing, articula-

tion, facial expression, general, mental, and bodily development ; he examined two thousand Copenhagen school children with regard to the frequency of this affection ; he made himself the apostle of his own teaching by proclaiming it not only in his own country, but also in scientific publications abroad. In one word, to such an extent did he realise the true significance of his discovery that he left to his successors merely the addition of more or less important details, whilst the foundation of the edifice erected by him has remained unchanged from the time of his own first publication on the subject.

Nevertheless, it cannot be said that this teaching at first made very rapid headway. When, in 1881, he introduced a discussion on the subject, at the International Medical Congress of London, it came almost—I well remember—as a novelty to many of his audience, although that was mainly composed of specialists, and it was only in the next decade that the true importance of the subject was realised throughout the world. It was at first not easy to convince the bulk of the medical profession, the parents of the mostly juvenile patients, and the school-masters, that a discovery had been made, which, like few others in medicine, was of the utmost practical importance, concerning the development of a healthy mind in a healthy body of the rising generation, and it needed the irrefutable proof of the surprising improvement seen in the subjects of successful operations to make this conviction a universal one. But truth, though slowly, ever forces its onward way, and when Meyer, three years ago, closed his eyes, he had the satisfaction of knowing that the value of his discovery had at last been universally recognized. Already then the number of those who, through the timely removal of the obstructing glands, had been saved from lifelong deafness, or from the lasting results of obstructed nasal respiration, amounted to many thousands, and the benefits achieved through Meyer's merits will continue to accrue in future times to hundreds of thousands, and to millions.

The proposition made immediately after his death to erect a statue to him at Copenhagen, under these circumstances, met with the most sympathetic reception ; committees were formed in almost every country in which scientific medicine is established ; in Great Britain the movement was particularly favoured by the patronage which Her Royal Highness the Princess of Wales most graciously extended to it ; physicians, surgeons, specialists, general practitioners, grateful patients, former patients, showed themselves anxious to contribute their mite towards a truly international monument of gratitude of his contemporaries towards the deceased great benefactor of the human race, and the result we see to-day before us in the shape of this beautiful and touching monument, which will carry the names of the artists, Messrs. Bissen and Runeberg, to every quarter of the globe.

It is true that in the general chorus of approbation a few dissentient voices have been heard. "What, after all," it has been said, "has been Meyer's extraordinary merit ? He put his finger up behind a patient's palate, and found an obstruction, which he removed, and which turned out to occur more frequently than could at first have been supposed." Very true ; but need I remind my audience that the same specious argu-

ment has been used against the claims of Christopher Columbus? America had been there all the time, only waiting, as it were, for the bold sailor to go westwards until he struck a new continent. But Columbus did it! The naso-pharyngeal cavity had been there waiting for its explorer ever since man in his present shape has been in existence. Pathological obstruction of this cavity has been as old as the records of the sculptor's art allow us to go back. In the last paper on the subject, which Meyer wrote a few months before his death, he showed that the facial expression of some Greek statues and busts which have come down to our times, left no doubt that the originals had been suffering from "adenoid vegetations"; mediæval portraits of historical personages prove the same fact. Any physician might have conceived the idea of investigating the subject as Meyer did in 1868, but it was left to Meyer to do it, and having done so to realize the importance of his discovery, whereby he became, without exaggeration, a true benefactor of the human race. That is why we are assembled here to-day, that is why we do honour to his memory.

Gentlemen, the country of Denmark has been rich in producing men of eminence in almost all branches of human activity. If in many instances the nature of their distinction is better known to their own compatriots than to the world at large, this is but natural, and is an experience which is repeated in every country under the sun. There are some Danes, however, whose names are household words throughout the civilised world, whose reputation is not a local but a universal one, and who, whilst their countrymen may be justly proud of them, belong, as it were, to mankind at large. Need I mention the names of Tycho Brahe, of Bertel Thorwaldsen, of Hans Christian Oersted, of Hans Christian Andersen, of Niels Gade? To those great names I think may be reverently added the name of Hans Wilhelm Meyer, one of the greatest benefactors to mankind medicine has known.

Mr. Mayor, in the name of the subscribers to this monument, who have gladly contributed towards this external sign of gratitude erected in memory of your great compatriot, I have the honour to deliver the monument of Hans Wilhelm Meyer to the safe keeping of the municipality of Copenhagen.

ON THE ETIOLOGY OF SOME NASAL REFLEX NEUROSES.¹

By W. POSTHUMUS MEYJES, M.D. (Amsterdam).

IN cases of nasal polypi in asthmatic patients I was often struck by the fact that the asthmatic attacks ceased after the removal of the polypi, although I had plugged the nasal cavity so that the nasal respiration was still more impaired after the operation than before.

¹ Paper read at the Sixth Annual Meeting of the Dutch Laryngological, Rhinological and Otological Society.

I was also surprised in other cases where there were no polypi, but where the nasal stenosis was caused by a close contact between the turbinated bodies and the septum from hypertrophy of the mucous membrane, or from spurs on the septum, to find that the attacks of asthma ceased at once if I only removed the spine by a cutting instrument, but that the attacks increased if I, previously to this operation, had cauterized the mucous membrane of the concha. In the latter case the inflammatory reaction generally caused a considerable swelling of the mucous membrane, and consequently a still closer contact between the septum and the turbinated bodies, while in the former case the plug introduced after the operation to prevent bleeding prevented any contact between the two surfaces.

I may also mention that one of my patients who suffered from asthma, and had a suppurating ethmoiditis with numerous small polypi, was able to prevent his asthmatic attacks by plugging his nose with cotton.

Sufferers from vasomotor rhinitis also often succeed in subduing the usual fit of sneezing, which arises when passing from cold to warm temperature, or *vice versa*, by pressing the nostrils together.

I concluded from these facts that the reflex was caused either by the current of the air passing during respiration over the hyperæsthetic parts, or by mechanical irritation through the hanging polypi, which were moved by the inspired air. Consequently, according to this theory, no radical cure of a nasal reflex neurosis can be expected by local treatment as long as there is any contact possible between the turbinated bodies and the septum.

In cases of nasal asthma, and vasomotor rhinitis, the two pathological conditions which are of the greatest importance for our subject, the most *marked* alterations are to be found on the inferior turbinated body. The greater these alterations are the more readily a cure by local treatment might be expected. The fact that this very frequently is not obtained I was induced to explain from the circumstance that the contact between the medial and the lateral wall of the nasal cavity was not quite removed, although the turbinated body had decreased in size after the operation.

A small hypertrophy of the anterior part of the middle turbinated body may easily be overlooked, as the dimensions of this pathological condition generally are smaller than one of similar character localized to the inferior turbinated body.

I am, however, of the opinion that the chief origin of nasal reflexes is to be found in the middle turbinated bone, it being so close to the septum that the slightest swelling produces a contact. It is a fact that the inspired air current passes in a curve along the middle turbinated bone and the opposite part of the septum, and upon careful examination it is exactly on this place that we find on the septum a rather extensive spot of hypertrophy of the mucous membrane. This locality—*tuberculum septi*—proves, when examined by means of a probe, to be soft and compressible, and may in some cases be so developed that the mucous membrane might be moved up and down as a triangular protuberance by means of a probe.

In two cases I have lately had under treatment I found this protuberance so large that I was able to cut out, by means of a galvano-caustic knife, a piece of the size of a pea.

Zuckerkindl is of opinion that this tuberculum septi is caused by an accumulation of glands in the mucous membrane.

When treating this subject I received from Gustav Spiess, of Frankfurt, a copy of a paper published in Fränkel, "*Archiv. für Laryngologie*," Vol. VII., under the title of "*Beitrag zu Detrolgie einiger Nasalen Reflex Neurosen*." In this paper Spiess gives an exposition of his opinion in the matter. To the well-known opinion about the origin of the nasal reflex neuroses (the contact between two points of the mucous membrane), Spiess adds, as his own opinion, the following: "I consider a displacement of these two surfaces against each other, may it be ever so minimal, or the irritation of these two sides by a third body placed between either (polypus, dust-particles, etc.), or the traction on these sides produced by adhesion, as requisite to this," *i.e.*, to the production of nasal reflex neuroses.

Spiess also found in some cases the tuberculum septi at the rhinoscopy having the appearance of a deviation, sometimes more or less projecting, and especially marking itself in the shape of a triangular protuberance, which diminishes in size upwards.

By insufflation of cocaine the swelling diminishes. This may, as far as I have been able to ascertain, be explained by the diminishing of the swelling of the mucous membrane without the necessity of maintaining the existence of "*Schwellkörperchen*."

If we examine by means of a probe the irritability of the pituitary membrane in normal individuals we easily find that the inferior concha is far less sensitive than the anterior part of the middle turbinated bone and the region of the tuberculum septi.

The inefficacy of local treatment of the nose in some cases of reflex neuroses I chiefly explain from the fact that it is thought of too much importance to normalize the less sensitive turbinated body—*i.e.*, the inferior one—and that further treatment is given up as soon as treatment of the inferior turbinated bone remains without any effect on the reflex neurosis.

Patients suffering from habitual headache, migraine, cephalic oppression, with or without giddiness, up to the very type of Ménière's disease, and such persons as suffer from what is generally called "a drop from the nose"—all these have in most cases anomalies of the anterior part of the second concha.

At the superficial examination the nasal cavity seems to be completely normal, but upon careful examination of the middle turbinated body we almost in every case discover a slightly cedematous and somewhat shining swelling of the mucous membrane of the anterior end. Upon touching this spot the patient feels either augmentation of the headache or a sensation of faintness, which may increase to nausea, while patients suffering from watery secretion from the nose may, after a few seconds, discharge a watery fluid from the nostril.

Very often we find small polypi, which, though attached to the

ethmoidal bone with a short peduncle, yet are moved up and down by the current of the inspired air, and such cause a friction of the middle turbinated body, or of the septum.

While in cases of pure vaso-motor rhinitis we only exceptionally find polypi, this pathological condition may be considered as almost regular in cases of asthma. Patients who suffer from Ménière's disease often are found to have polypi in the middle meatus of the nasal cavity. In some cases the removal of these polypi makes the giddiness disappear. I, therefore, consider it important to examine the anterior part of the middle turbinated body in all cases of Ménière's disease, even if there is no question about polypi. I often found an œdematous swelling, but in some cases I did not discover anything abnormal. If there was a slight alteration there was generally also a strong development of the tuberculum septi, and local treatment of both caused the symptoms of Ménière's disease to disappear entirely in some cases, and temporarily in others. When the symptoms reappeared again I generally found the swelling had reappeared. The galvano-caustic lines, which I made rather deep into the tissue, appeared very often insufficient to prevent a relapse of the swelling. Spiess, therefore, thinks it necessary to remove the tuberculum entirely, either with scissors or with galvano-cautery—a treatment which I also have adopted in such cases.

The reason why anomalies of the nose give severe reflex symptoms in some patients and no disturbances in others must necessarily be explained by the different nervous predisposition.

The best results of internal medication I saw in cases where I administered arsenic in the form of Fowler's solution.

If in cases of nasal reflex neuroses we proceed to perform operations, such are to be done in a decisive manner, leaving no point unexamined, and considering even the slightest alterations in the structure as pathological.

In this respect I must mention an interesting case of a middle-aged lady who for twenty years had been suffering from hypersecretion from the nose, in which case cauterization of the polypoid hypertrophy of the inferior turbinated bone gave little result, whilst cauterization of an apparently insignificant œdematous swelling of the front part of the middle turbinated bone caused a complete cure.

When patients with asthmatic attacks have been cured by entire removal of their nasal polypi, new attacks sometimes reappear suddenly, and in the rather wide nasal cavity we find a polypus, of the size of a pea, pressed between the concha and the septum. The removal of this apparently insignificant polypus—which might not be considered of any importance on account of its small dimensions as a mechanical disturbance of the nasal breathing—prevents, however, immediately, a return of the asthmatic attacks.

Such observations are proofs that even a very slight irritation caused by the rubbing of a little polypus moved by the inspired air may be considered as the cause of nasal reflex neuroses.

ON THE VASO-MOTOR INNERVATION OF THE LARYNX.¹

By Dr. E. HÉDON,

Professor of Physiology to the Faculty of Medicine at Montpellier.

Translated by MACLEOD YEARSLEY, F.R.C.S., Assistant Surgeon to the Royal Ear Hospital, etc.

WE know how easily the laryngeal mucous membrane reddens under the influence of various irritants. Congestion of the larynx may even go as far as the production of blood extravasations (hæmorrhagic laryngitis). The hyperæmic phenomena are probably due to vaso-motor troubles of reflex origin. At least, by analogy with what we know of the vaso-motor innervation of other organs, it is legitimate to attribute to vaso-dilator action the laryngeal congestions which appear in certain cases; for example, the hyperæmia which follows in the wake of prolonged vocal efforts (as is often the case with singers, orators, etc.), and which is evidently a functional hyperæmia, just as it is with that of the submaxillary gland at the moment of secretion. On the other hand, clinical observation teaches us that congestion of the larynx can have a very remote origin, namely, in the generative apparatus.

The connections of "sympathy" which bind the larynx to the genital organs are well known. Not only does laryngeal congestion show itself temporarily at the time the voice breaks, and, in certain women, during the menstrual period, sometimes also following sexual excitement, but it even appears as a chronic condition in consequence of certain diseases of the generative organs (various uterine affections, displacements, ulcerations of the cervix), and this proves that there undoubtedly exists, in the latter cases, a connection between the two classes of affections, since it is sufficient to treat the uterine trouble to get rid of the laryngeal congestion at the same time. No one can doubt that in these cases reflex circulatory troubles are at work, because physiology has shown that we can initiate, by the excitation of certain sensory nerves, reflex vaso-motor phenomena in places very remote from the point of irritation. The reflex origin of laryngeal hyperæmia in certain affections of the nasal mucosa is no longer doubted.

All these facts imply the existence of vaso-motor nerves for the laryngeal vessels, as for the vessels of other organs. Nevertheless, there does not exist any physiological experiment tending to directly prove their existence, and, although there scarcely exists any other organ of the body whose vaso-motor nerve supply has not been most carefully investigated, the larynx appears to have been put aside in this connection. At least, after my bibliographical researches, I do not believe that physiologists have occupied themselves in proving if the larynx does possess any special vaso-motor nerves; so much the more is the question

of the origin and course of these nerves untouched. One only finds in the whole of the literature one work—that of G. Spiess¹—which treats of the subject; but, since this author in his tentative experiments has only obtained negative results, one cannot say that he has thrown much light upon the question.

Spiess performed at the Physiological Institute of Leipzig certain experiments on dogs. He endeavoured to produce modifications of colour in the laryngeal mucous membrane by dividing and exciting the nerves which may be suspected of carrying vaso-motor fibres for this organ—that is to say, the great cervical sympathetic and the two laryngeal nerves (superior and recurrent).

After what we know of the results of section of the sympathetic cord in the neck there is evident reason for supposing that the vessels of the larynx would present after this operation a paralytic dilatation at the same time as the other vessels of the corresponding half of the head. But the result was nil. For the first half-hour after section of the sympathetic of one side the laryngeal mucous membrane did not present any modification of colour; but on taking a fresh observation, a few days later, a general red coloration showed itself—not localized to the side of the divided nerve. If, then, concludes the author, one wishes to attribute this reddening to the section of the nerve one would have to admit that the peripheral terminations preserve their tone a long time after division, and that they are distributed to both sides of the larynx.

Irritation of the nerve gave no more positive result; Faradic stimulation, weak or strong, to the peripheral end brought about no change of colour in the mucosa when the same was previously hyperæmic. "The division and stimulation of the superior and inferior laryngeal nerves threw equally no light upon their connection with the arteries of the mucous membrane. The section and stimulation of the peripheral ends of the two nerves were devoid of consequences. Additionally, as was the case with the sympathetic, a slight redness of the mucosa showed itself the third or fourth day after the section of the superior laryngeal nerve. It also extended to the two sides, and was not localized to the side corresponding to the divided nerve. This condition was not, however, of long duration. It disappeared at the end of two days." After these experiments Spiess considered the question of the vaso-motor nerves of the larynx of the dog, and still more so of man, as not settled.

In carrying out on my part a certain number of investigations on the subject, I have been able to convince myself that the negative results of Spiess were partly due to faulty technique. In every case the stimulation of the peripheral end of the superior laryngeal nerve is not, as he affirms, "devoid of consequence," as it produces a reddening of the laryngeal mucous membrane on the side corresponding to the nerve stimulated, constant and sufficiently distinct for there to be no doubt as to the vaso-motor function of the nerve trunk; the same stimulation started simultaneously the secretion of the small mucous glands of the

¹ G. Spiess: Ueber den Blutstrau in der Schleimhaut des Kehlkopfes und des Kehldec
"Arch. f. Physiol. de Dubois-Reymond," p. 503, 1894.

larynx. The superior laryngeal should, therefore, be considered as the vaso-dilator and secretory nerve for the laryngeal mucous membrane.¹

To make evident the phenomenon I have just mentioned, one must experiment under certain conditions, as it is by neglecting these that Spiess missed the vaso-dilator action of the superior laryngeal.

It is necessary to operate on a curarised animal, and with artificial respiration, for, to verify vaso-motor actions in all their purity (and the more so when the delicate observation of vascular modifications is in question, as in the present case), it is indispensable to eliminate all muscular contraction of a nature likely to upset the production of the phenomenon. In his experiments, Spiess rendered his animals motionless by placing them under the influence of morphine with atropine, after the method of Dastre. I believe this is the reason he only obtained negative results; for he did not fail from faulty observation (he examined the laryngeal mucous membrane carefully, well illuminated through the buccal opening by means of an Edison lamp fixed on the forehead, and sometimes with a Brücke's lens over the previously opened larynx). The use of morphine is sufficient to explain his non-success; the drug is not at all favourable for the study of vaso-motor actions. The same experimenter also ought not to have missed absolutely the secretory phenomenon which appears equally as one of the results of stimulation of the superior laryngeal, for, on the one part, his attention was not even aroused on this point, and, on the other part, the poisoning of the animal by atropine evidently abolished all excito-secretory action. One cannot ignore the fact that very small doses of atropine suffice to completely suspend the secretory action of the chorda tympani on the submaxillary gland.

Leaving now all critical considerations of Spiess's work, I will briefly explain the method I used in my experiments. The curarised animal was tracheotomised (very low, at the root of the neck, to avoid any effect the tracheal incision might have on the circulation of the laryngeal mucosa), and placed under artificial respiration. The two superior laryngeal nerves were exposed on each side of the larynx, and divided a little above the point where the nerve trunk branches before piercing the thyro-hyoid membrane. In this dissection, that no mechanical obstacles might be caused to the circulation of the larynx, great care was taken not to divide any important vessel, and, above all, any vein. A thread attached to the peripheral end of the nerve allowed of its being lifted for the application of the electrodes. This done, there were two methods to choose from for observing the mucous membrane of the larynx; the larynx might be opened by thyrotomy, or laryngoscopic examination, through the mouth, could be practised with ease. The incision of the thyroid and cricoid cartilages, done with care and without hæmorrhage, allows the mucous membrane of the larynx to be well seen, and with all the requisite clearness, and it is the method by which I was able to convince myself of the existence of the excito-secretory properties of the superior laryngeal; but for ascertaining the vaso-motor variations it is absolutely to be rejected.

¹ E. Hédou : Sur la présence dans le nerf laryngé supérieur, des fibres vaso-dilatatrices et sécrétoires pour la muqueuse du larynx. Comptes rendus de l'Académie des Sciences, 27 juillet, 1896, et "Presse Médicale," 28th Nov., 1896, No. 98, p. 645.

Opening the larynx particularly interferes with the capillary circulation of the mucous membrane, and stimulation of the laryngeal nerve, when the mucous membrane is already hyperæmic from exposure to air, can give no positive result; or only an uncertain one. It is only in some favourable cases that the mucous membrane remains pale despite the contact of external air. One sees it redder in the arytenoid region at the moment when the stimulation is carried by the nerve; yet the phenomenon, little accentuated, might be open to doubt if the examination of the mucous membrane by the lens did not allow of directly verifying the increase in size of the small vessels. This method is, then, insufficient—the more so, since it does not take in the examination of the epiglottis.

The examination of the larynx *vid* the mouth in the curarised dog is extremely easy. No laryngoscope is required. It is sufficient to separate widely the jaws of the animal, and to hold the tongue drawn well out of the mouth, to see the opening of the larynx as well as, and more conveniently, than with a laryngoscopic mirror. On holding the epiglottis down on the dorsal surface of the tongue, by means of a spatula, the chink of the glottis and the vocal cords appear in their entirety. If the illumination is good (light directed from a small incandescent electric lamp, or reflected from an ordinary lamp by a frontal mirror) the colour of the laryngeal mucous membrane and its changes can be easily appreciated.

If, then, whilst the aperture of the larynx is thus examined an assistant stimulates the peripheral end of one of the laryngeal nerves with a Faradic current of medium intensity, the mucous membrane covering the arytenoid cartilage, and the interarytenoid region will be noted to redden immediately, particularly on the side corresponding to the stimulation. The difference in colour to the opposite side is clearly decided. The mucous membrane of the other parts of the larynx in the glottic region does not change, the vocal cords remain white. As to the epiglottis, it certainly participates in the vaso-dilatation; if it be allowed to fall back on the orifice of the larynx, the small vessels which run over its lingual surface are distinctly seen to dilate, during the stimulation, on the side stimulated, whilst, at the same time, others not previously seen become visible.

When the stimulus ceases the vessels regain their original calibre, and the experiments can be repeated a certain number of times. By stimulating alternately the right and left laryngeal nerves the vaso-dilator phenomenon can be produced at will on one or the other side of the larynx.

This experiment, repeated a certain number of times, leaves me no doubt as to the existence, in the superior laryngeal nerve, of vaso-dilator fibres for the laryngeal mucous membrane; nevertheless its observation is of so delicate a nature that it is better not to trust exclusively to one's own eyes in admitting its truth. But it appears to me difficult to construct an apparatus sufficiently sensitive to register the changes in volume of the mucous membrane. I have not made any attempt in this direction. I have simply sought to secure all the elements of certainty by making different individuals note the phenomenon, and by working in the follow-

ing way : I first anticipated the observer by stimulating the right or left nerve, and asking him to tell me if he perceived the reddening of the arytenoid mucous membrane on the stimulated side ; on his replying in the affirmative, I proceeded to a new test, but this time without alluding to the side which carried the stimulus ; in spite of that he had not any hesitation, and was never deceived as to the side implicated ; further, I pretended several times to stimulate the nerve by bringing the electrodes close without touching it ; in this case the observer vainly sought the appearance of the redness, and was for the moment forced to avow that he did not see any change. I was thus assured that the vaso-dilatation that I had myself observed really did occur, and was perceptible to everyone not prejudiced.

Thus the superior laryngeal nerve contains vaso-dilator fibres for the laryngeal mucous membrane, just as the lingual includes those for the submaxillary gland and lingual mucosa, and the superior maxillary for the nasal and buccal mucous membranes.

As the stimulation of these last nerves causes at the same time as the vaso-dilatation the secretion of the glands, there is every probability that the superior laryngeal possesses also an excito-secretory action. Indeed, it is easy to prove that the stimulation of the peripheral end of the nerve causes the small mucous glands of the laryngeal mucous membrane to secrete. If the larynx be split by a median incision through the cricoid and thyroid cartilages and the thyro-hyoid membrane, the epiglottis divided longitudinally into two equal parts, and the lips of the incision opened out with hooks, the mucosa of the sides of the larynx can be exposed and examined with a lens. After gently drying the surface the peripheral end of one of the laryngeal nerves is stimulated ; immediately on the posterior surface of the epiglottis—the arytenoid and subglottic mucous membrane—may be seen drops of mucus forming globules at the orifice of the glands and uniting, if the stimulation be prolonged, to form a viscous layer over the whole surface of the side corresponding to the stimulus, whereas on the opposite side the mucous membrane remains nearly dry. I have seen this secretion not only in the dog, but also in the sheep.

The vaso-dilatation and secretion are the product of direct effects, and not reflexes, for the whole of the recurrent sensory path is already interrupted by the section of the two superior laryngeal nerves ; but, if for greater security the two inferior laryngeal and the vago-sympathetics be divided, no change takes place in the phenomenon.

The secretory action of the superior laryngeal on the mucous glands of the larynx has also been pointed out by P. Kokin¹ in a paper published in "*Pflüger's Archives*." I consider that, in strict right, the priority of the investigation belongs to him, since the volume of the "*Archives*" which contains his work is dated some days previous to my communication to the Academy of Sciences. It is, moreover, with satisfaction that I have proved by reading his paper (of which I naturally took no notice until

¹ P. Kokin : Ueber die Secretorische Nerven der Kehlkopf und Luftröhrenschleimdrüsen. "*Archiv. f. die Gese. Physiol.*," LXIII., p. 622, 1896.

after the publication of my own researches) that we have reached on both sides the same conclusion. This author found, further, that in the dog the superior laryngeal contained secretory fibres for the superior and inferior portions of the trachea. These fibres joined in the larynx with the inferior laryngeal, since they broke up again to throw themselves into the tracheal nerve—a nerve trunk which receives fibres from the inferior laryngeal, or the same directly from the vagus. (In the cat the secretory fibres for the mucous glands of the trachea and inferior part of the larynx are contained in the inferior laryngeal.) Further, the stimulation of the secretory fibres on one side will cause an increase of glandular activity on the other side. But if Kokin has proved, like myself, the secretory action of the superior laryngeal he does not appear to have noted its vaso-dilator properties.

The discovery of this new vaso-dilator and secretory nerve appears to me to have a certain importance for general physiology, beyond the particular interest which it possesses relative to the special physiology and pathology of the larynx.

The number of vaso-dilators known is really very limited. The stimulation of any nerve trunk produces a contraction of the vessels, and it is a remarkable exception that certain nerves cause the opposite vascular change. These last are, as is known : (1) The lingual for the submaxillary gland (C. Bernard) and the anterior two-thirds of the tongue (Vulpian), the lingual containing the vaso-dilator fibres of the chorda-tympani ; (2) the glosso-pharyngeal for the mucous membrane at the base of the tongue (Vulpian) ; (3) the superior maxillary and the buccal branch of the inferior maxillary for the nasal, buccal, gingival, and labial mucous membranes (Jolyet and Laffont), these last vaso-dilator fibres being contained also in the cervical sympathetic (Dastre and Morat) ; (4) the erectile nerves for the corpora-cavernosa and glans (Eckardt). These are the only nerves whose direct vaso-dilator action we know of at present.¹ It will be necessary, after my researches, to add to this list the superior laryngeal nerve. Following the theory generally accepted now, the nerves in question cause vaso-dilatation by abolishing the tone exercised over the small vessels by the microscopic ganglia contained in the vascular walls themselves ; it is an inhibitory action. But the existence of these intraparietal ganglia has not been proved for the vessels which are subject to vaso-dilator nerve action ; elsewhere it is only hypothetical. It will be interesting to discover whether the vessels of the laryngeal mucous membrane are thus provided.

The superior laryngeal, which is the sensory nerve to the larynx, obviously carries to the nerve centres the sensory impressions which ordinarily happen in the production of laryngeal vaso-motor and secretory reflexes ; it contains, then, both the centripetal and centrifugal tracts for these reflexes. It is exactly the same with other vaso-dilator nerves, which are also sensory nerves. Nevertheless, in one experiment, I did not succeed by stimulating the central end of one of the laryngeal nerves,

¹ We may add, that the presence of vaso-dilator fibres has been pointed out in the cervical sympathetic for the retina (Poncet, Doyon), and that Franck is inclined to look upon the pneumogastric as a vaso-dilator nerve for the pancreas.

the other being intact, in giving rise to the vaso-dilator reflex on the opposite side to that stimulated ; but this negative result, if confirmed, would only prove that the experimental production of a cross reflex is not possible in this case.

Does the superior laryngeal contain vaso-constrictor fibres, as well as vaso-dilator fibres ? I am inclined to believe so, because it has appeared to me that as the result of simple section of the nerve of one side alone, the arytenoid mucous membrane became a little more vascular on that side than on the other. I can only give this result with every reservation. So after section of the vago-sympathetic at the middle of the neck, I have observed a slight hyperæmia of the laryngeal mucous membrane on the arytenoid and epiglottis ; in stimulating the central end of this nerve trunk, the redness was slightly lessened. On the contrary, ablation of the superior cervical ganglion, section of the recurrent and stimulation of its peripheral end only gave negative results. It would be premature to base on these experiments, so little decisive of result, a demonstration of the vaso-constrictor fibres for the larynx. I think that further researches are necessary, and I limit myself, as a conclusion to this paper, to affirming the vaso-dilator and secretory functions of the superior laryngeal for the laryngeal mucous membrane.

**PROF. STETTER'S OUT-PATIENT DEPARTMENT FOR
DISEASES OF THE EAR, THROAT, AND MOUTH,
IN KÖNIGSBERG.**

Ninth Annual Report. ("Monats. für Ohrenheilk.," May, 1898.)

1995 patients were treated, of whom 1044 were aural cases.

Prof. STETTER points out the special incidence of ear disease in children and young persons up to twenty years of age. The first two decades of life furnish almost as many aural cases as the last five. With regard to operative treatment he adopts a conservative standpoint.

Wylde's incision was made in eleven cases and proved sufficient, even in chronic cases. The mastoid cells were only opened where there was a bony fistula, or where the bone was discoloured, bluish, and soft.

A Case of Otitis with Two Separate Abscesses in the Mastoid.

R. G., aged forty-four, sailor, came under observation with otitis of three weeks' duration. The mastoid was swollen and tender. There was a perforation in the posterior upper quadrant. The perforation was at once enlarged, and next day the superficial mastoid cells were opened, exposing a cavity full of pus and granulations, but not communicating at all (apparently) with the middle ear. No relief followed the operation, and three days later a second cavity was found above and behind the other, and not obviously communicating with it, but communicating freely with the middle ear and meatus.

Stetter considers that this case supplies an argument in favour of opening the antrum from the middle ear. The second operation was successful.

Hæmorrhagic Myringitis occurred frequently in association with influenza. The blood blisters were opened at once, and never suppurated. The naso-pharynx was treated with a spray of sozodol. zinc (Iodo-para-phenol-sulphonate of zinc).

Chronic Dry Myringitis was treated with drops of acid. sozodol. dissolved in castor oil, with the addition of a little alcohol. Massage of the membrane was practised with Breitung's apparatus, worked by an electric motor. The drops promote absorption of infiltration, and diminish thickening of the membrane, so that the massage is more effectual. Undue vascularity of the membrana, such as often remains after acute rhinitis, is quickly removed by two per cent. solution of sozodol. zinc.

Conservative Treatment of Chronic Otorrhœa.

(a) If the discharge is tough, stringy muco-pus, the ear is filled with lysol water (thirty drops to half a litre of boiled water), and this is allowed to remain in the ear for three minutes, after which the meatus is packed with chinolin-naphthol gauze. At first this dressing may have to be repeated four times daily.

(b) If the discharge is thin the ear is simply wiped out with sterilized wadding dipped in lysol water, and then packed with gauze as before.

Only when discharge is greatly diminished does he proceed to remove granulations with the snare, sharp spoon, or tri-chlor-acetic acid. The acid must be applied quickly, or fumes obscure the view. The meatus should be washed out afterwards with lysol water and packed with gauze.

Hypertrophic Rhinitis Stetter treats with submucous cauterization. The mucous membrane is less injured, and there is no danger of adhesions forming between the turbinated body and the septum. He reports favourably of Laker's massage.

Ozæna.—The nose is washed out with lysol water, and then powdered with potassium sozodol. Fœtor is quickly diminished, and also the tendency to crust formation.

Empyema of Antrum.—Stetter made Dieffenbach's incision for excision of the upper jaw without dividing the upper lip. This enabled him to remove the facial wall of the antrum and scrape out the cavity. Cure was rapid, and the scar in the naso-labial fold hardly noticeable.

Diseases of the Tongue.—A form of papillary glossitis is described. It occurs at the base of the tongue and affects the circumvallate papillæ. They are enlarged, and the epithelium is thickened and more horny than normal. The lingual tonsil is sometimes also enlarged. The patients complain of constant tickling in the throat and cough. The larynx is normal. Stetter clips off the enlarged papillæ with scissors, and, if necessary, cauterizes the tonsil.

Cyst of Lower Jaw.—A tense bluish-white swelling as big as an egg occupying the molar region. The teeth had fallen out apparently sound. Duration, eighteen months. The projecting part of the cyst was cut off and the cavity scraped out and packed with iodoform gauze. The cyst was lined with epithelium similar to that of the gums. The contents were fluid, white and thickish.

William Lamb.

DR. KAYSER'S (LATE GOTTSTEIN'S) EAR, THROAT, AND
NOSE KLINIK IN BRESLAU.

Report for 1895 and 1896. ("Monats. für Ohrenheilk.," April, 1898.)

3478 new cases were treated.

Amongst *Operations* we notice that the ossicles were removed seven times, the mastoid was opened fourteen times; there were fourteen operations for deviatio septi, twenty-one for empyema of the antrum of Highmore, and fourteen for empyema of the sphenoidal and ethmoidal cells.

Treatment of Otitis.

The dry method answers for milder cases with little discharge, *i.e.*, not more than a gauze packing can comfortably absorb, but cases with profuse discharge require syringing, after which a little boracic powder may be insufflated.

The Mastoid Operation. A fatal accident.

A child of four months had a mastoid abscess connected with carious bone. In scraping the carious place with a sharp spoon the dura mater was injured, and the child died of meningitis.

A similar case was reported from Schwartz's klinik, and in a third case, in a ricketty child, a periosteum scraper slipped and fractured the skull, with a fatal result.

A Case for Diagnosis.

A boy of three had measles, with pneumonia and left otitis. After some weeks facial paralysis appeared, and he began to have rigors, three or four a day. The membrana tympani was destroyed, the mastoid not tender, the cervical glands swollen. An abscess formed above the wrist, another near the knee. No cord could be felt in the neck. The radical operation was performed, and the sinus exposed. It was bluish-grey, not pulsating, and contained liquid blood, in which no bacteria could be found. Blood from the toe was also examined. No improvement followed the operation, and the boy had two or three rigors daily, with paroxysms of fever (105°). A third abscess formed in the upper arm. Eight days after the operation the temperature fell to normal, the rigors ceased, and recovery set in.

Was this a case of pyæmia from temporal osteo-phlebitis, as described by Körner, or a case of measles-pyæmia, causing both the otitis and the abscesses?

A Case of Occipital Abscess from Otitis Media.

A man of seventy had otitis, followed after a few days by a swelling in the occipital region. The mastoid was not tender. After months of illness, and repeated incisions, pus and bare bone were found in the occiput. The infection had passed out through the mastoid to the deep cellular tissue of the nape of the neck without causing any noticeable change in the mastoid itself.

Two Cases of Concussion of the Auditory Nerve from Occupation.

1. Ringing tinnitus, slight deafness, Rinné +, weakened perception of high notes, bone conduction shortened.
2. Ringing tinnitus, decided deafness, Rinné O, bone conduction shortened, and abolished for the watch.

Rest quickly cured both cases.

Accessory Cavities of the Nose. Serous Exudation into the Antrum of Highmore.

There was muco-pus on the floor of the nose, but none in the middle meatus. On puncture from the lower meatus clear lemon-yellow liquid came away, and similar liquid was discharged from the nose during healing, which occupied three weeks.

Antrum cases vary in duration from three weeks to eighteen months, or even longer. Granulation tissue and fragments of dead bone are the chief causes of delayed healing.

Frontal Sinus. Empyema.

In four cases there was spontaneous rupture into the nose, with rapid healing. The symptoms were pain and tenderness over the sinus, and a little pus could be seen at the front of the middle meatus. In one case a polypus blocked the infundibulum.

Sphenoidal Sinus. Three typical cases are described.

Headache was frontal, temporal, or occipital. Pus was visible in the olfactory fissure, and generally in the naso-pharynx, and the probe passed across the middle of the middle turbinated, reached rough bone at a depth of eight to eight and a half centimètres from the entrance of the nose.

Cases complicated with Disease of the Ethmoidal Cells were most troublesome. It is often impossible at first to decide whether pus comes from the posterior ethmoidal cells or the sphenoidal sinus, and there is nothing for it but to trace the pus back, step by step, to its source. From one-third to one-fourth of the empyema cases were associated with polypi. Such polypi are redder in colour and firmer in consistence than ordinary mucous polypi.

Rhinitis Caseosa of eighteen months' standing.

The deeper part of the right nostril and the choana were blocked by a stinking mass of cheesy pus. On removing this a carious spot was found on the septum opposite the posterior part of the middle turbinal, which was considerably hypertrophied.

Two Cases of Retropharyngeal Abscess in Adults occurred as a sequel of influenza.

In seven cases of *Diphtheria* Behring's antitoxin was used with good results. The clinical picture of diphtheria may be complete and typical without the bacillus being present. Only the bacteriological diagnosis can be trusted.

Phthisis Laryngea. Three cases of spontaneous cure are described, and three cases in which cure followed curetting and lactic acid.

William Lamb.

SOCIETIES' MEETINGS.

THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Fourth Annual Meeting, May, 1898.

(Specially reported by Dr. R. C. MYLES for the JOURNAL OF LARYNGOLOGY.)

ADDRESS OF THE PRESIDENT, W. H. DALY, M.D. (Pittsburgh, Pa.).

Gentlemen,—I have much honour and pleasure in bidding you a hearty welcome to our city. I am sure you will all experience an agreeable surprise on this your first visit here, since the just reputation of Pittsburgh, being a vast manufacturing centre, has also made it to be regarded as only remarkable for that distinction; but you will, notwithstanding, also find other things of vast proportions that will appeal to your higher æsthetic senses.

Here we have hundreds of acres of public parks, just now presenting an unexcelled vernal beauty of hill, and dale, and vista. The public conservatory of plants, a present from a generous citizen, Henry Phipps, is equal to the best in the country; and Carnegie Music Hall, Library and Museum, a gift of the noble Pittsburger whose name it bears, is in keeping with the most liberal expenditure and advanced taste of this wonderful age. Without overstepping the bounds of modesty, we may say Pittsburgh, therefore, like good old wine, "needs no bush," and while you have brought us rich presents of scientific value in learned lore, as indicated in the charming programme before us, reaching as it does from our distinguished *confrère* Lennox Browne, of London, to Massei, of Naples, with other learned lights in our profession from the great cities of our own land. We with grateful hearts, your Pittsburgh members, through me, thank you deeply for having honoured us. We are twice honoured, in fact as well as in sentiment, for it was in this city, two years ago, that the older national organization of laryngologists, which we all revere for its high scientific work, met with just the same number of papers to be read and discussed, viz: thirty-four, and also, with your present speaker as its president. Truly Pittsburgh has been honoured, and your speaker placed under a debt of gratitude, for the kindly partiality and consideration that any man can ever receive from distinguished *confrères*, whose names are as household words in all the higher planes of thought, in laryngology, rhinology, and otology. What more can I say, than to express a personal pride to you in being—as you are well aware of, unsolicited on my part—called to the office of your president? This honour is all the more touching, since the membership is largely made up of the young men, whose names are not only the glory and pride of laryngology, but men whose writings and discussions are read with avidity, that speaks, without saying it, that they are of the highest scientific and analytical value.

Now, gentlemen, if I have seemed to speak to you with much freedom of commendation, I can only say as one of the older laryngologists, "Yet we are only a trifle older, but not better soldiers," and we are, older and younger, as one—proud and determined to carry onward our lines of advance, wherever we are placed, so that the coming unfolding of the twentieth century will find that we, too, have a right to our names high upon the roll of honour, for work well done, for studies well prosecuted and for solid results in the preservation of human health, even though our work be done, unheralded by the blare of trumpets, or without the knowledge of the great outside unthinking world, who look, alas, too often, upon the medical man as some one whose aid is sought to enable the patient to indulge in habits, excesses, and exposures, not meant for thinking human beings; but if we have any doubt as to whether modest scientific labour is unrewarded, let us all remember that dear good man, Dr. Wilhelm Meyer, of Copenhagen, Denmark, whose close friendship it was my esteemed privilege to enjoy through many years previous to his death. His life was pure, his mind was that of a deep thinker, yet his manner as gentle as a child's.

I once heard Sir Morell Mackenzie say, at a banquet of laryngologists in Denmark, that before Newton lived apples had fallen to the ground, and before Wilhelm Meyer lived pharyngeal adenoids had existed, but the significance of these facts awaited an interpretation by two great minds. Wilhelm Meyer literally died in the harness, from pneumonia, contracted from exposure in the damp tombs and crypts of Italy, where he had gone in his old age to study afresh among the tombs of the ancients the evidence of pharyngeal adenoids as depicted by the separated lips of the sculptured images of the dead of past ages.

A letter I just received from his aged widow, now residing in Venice, is filled with grateful appreciation of the spontaneous outflow of money from the profession of the greater civilized nations, which culminated in the erection of a monument to the memory of Wilhelm Meyer in his native city. I am proud for America, that her sons in medicine contributed most nobly, and I am also happy that I, as president of the older national body of laryngologists, set the work on foot, by appointing a large and able committee in every city in America, headed by Dr. D. B. Delavan, of New York, Dr. M. B. Ward being sub-chairman of the Pittsburgh committee. They more than fulfilled the best results that I promised for them to Felix Semon, and others in London and Denmark, who had there this sacred office in hand. Dr. Delavan's labours were considerable, covering as they did our entire country, and they were well and cheerfully done, as he, too, was a loving friend of the dead master.

The work in our several special lines has been so vast and efficient in the past year that it is quite impossible for me to touch upon it in even a passing comment. A mere index of it would take hours to read, and I forbear owing to the mass of excellent work now before us. America, however, as usual has a large share of the solid practical advance to her credit.

While we meet in the peaceful avocation of science, we are so small an integral part of a vast and mighty nation that we scarcely see any-

thing here to remind us of the clash, pomp, and circumstances of grim war. Yet I am sure that others here, possibly all, have from patriotic motives like myself, placed themselves on call from their country, should they be needed for the good of the service and the nation.

The speaker, being probably the oldest here, had experience from the first to the last of the war for the Union, and knows only too well its exposures and trials, but should he or any of us be needed, we are ready to go and to do our duty wherever we may be of the most efficient service to our country's flag and the cause of freedom. In the meantime, while others of our countrymen are now carrying the banner, and impatiently awaiting the order to forward! march! let us improve our qualifications by earnestly listening to the bright scientific essays that are here to be read and discussed, and I now to that end declare this our Fourth Annual Congress open, and bid you God-speed and much mental benefit.

Exhibition of Cases.

Dr. CHARLES W. RICHARDSON (Washington, D.C.): I have a case that came to me about three years ago of affection of the cuticular surface of the auricle. This disease affected only the cuticular surface; then there was complete destruction of the surface of the auricle. The gentleman who contracted the disease was originally on the Guatemalan-Mexican Boundary Commission, and he told me that this disease was very prevalent in the province of Petan in Guatemala, and affects only the auricle. The case excited my curiosity, and I had a bacteriological examination made of the diseased tissue, and in its specific bacillus was found the bacillus that caused this disease. It is similar to the disease known as "buton d'emble," which exists in India and in the Nile region, but in these regions it is not limited to any particular part of the body. It was very difficult for me to gain much information about this disease. I appealed to the Guatemalan Minister, and he put on foot an investigation concerning this disease, but the doctors, even in this region, know very little about it. My patient returned to Guatemala, and promised to send me some information. I will show one of the photographs of one of the characteristic lesions after the disease has produced complete destruction of the cuticular surface of the auricle. It is a peculiar fact that this disease in this region only affects the cuticular surface of the auricle. I arrested the progress of the disease in this gentleman with the use of bichloride of mercury, which kills the bacillus. The cuticular surface of the auricle is now in normal condition. I saw him a week ago. [Photograph exhibited.] Dr. Theobald Smith, late of Washington, now of Harvard Medical School, made the examination for me, and I received from him a few days ago a letter, in which he states that he has slides of tissue and drawings of bacillus.

I report the case briefly at the present time, and will publish the same in full later. I report the case as a matter of original research, the bacillus of this disease never having been found before.

Dr. T. C. CHRISTY (Pittsburgh, Pa.). *Dysphonia; Relief with the Use of the Galvanic Current.*

Dysphonia or phonæsthenia is a relative term—a condition arising from acute and chronic affections of the larynx and trachea, generally associated with cough or pain. The observer, thoroughly familiar with the natural healthy mucous membrane protecting the upper respiratory tract, should study carefully the interarytenoid space, the glottis, and the subglottic space with regard to the changes induced by the severe inflammation of these parts. The three classical cough centres are the interarytenoid space, the posterior wall of the larynx, and the spur at the bifurcation of the trachea.

Pain is referred to the larynx proper, and is due to the forcing of the air through the narrow glottis from below, it being an admitted fact that the inferior surfaces of the true cords are more exquisitely sensitive than the superior surface.

The subglottic space is the narrowest part of the larynx, and all pathological changes occurring in this space tend to stenosis, and so alter the relative proportions as to modify the resonance of the voice and interfere with phonation and respiration.

The two symptoms characteristic of laryngeal inflammation are: dysphonia by intact true cords, and the short, frequent cough without any secretion, which is painful to hear and witness. Involvement of the trachea causes an additional symptom of weight or pressure in the wind-pipe, with pain and distress over the episternal notch—a constant symptom, radiating down the central part of the sternum, and frequently to one or both sides of the upper chest.

Treatment is sought for relief of pain, cough, and dysphonia. The voice may be quite clear in the morning, grows husky and raucous with the approach of evening, when the patient speaks with increased effort or is aphonic.

Treatment requiring surgical measures, such as intubation, tracheotomy, and removal of growths, were not considered.

The dysphonia in professional voice-users is of frequent occurrence, and is an interesting study. For its relief the writer employs the constant current. The results attending are noted in a series of cases with these conclusions. The galvanic current as a curative agent in laryngeal and tracheal affections is—

- (a) Easy of application;
- (b) Soothing and agreeable to the patient;
- (c) Relieves the congestion, pain, and irritation;
- (d) Does not excite pain or spasm of the glottis or trachea;
- (e) Relieves the swollen lymphatic glands;
- (f) Cures more promptly than any other agent;
- (g) Patients recognize its value, and return regularly for its application.

DISCUSSION.

Dr. ROBERT LEVY (Denver, Colorado): I think the Society owes a vote of thanks to Dr. Christy for his very excellent paper. It is not my purpose to say much about the treatment of dysphonia in general, but

just a word in regard to the beneficial effects of the galvanic current in dysphonia, particularly in the case of the theatrical profession, in which case quick results must be effected. We must produce immediate results to satisfy our patients. I wish to call particular attention to that form of huskiness or hoarseness which often occurs early in cases of tuberculosis. I contend that this symptom is of great value from a diagnostic point of view. Anæmia of the larynx, and a slight huskiness of the voice, in connection with the pulmonary symptoms, is a diagnostic symptom of exceeding value. I think also that the hoarseness or huskiness of incipient tuberculosis may be caused by, or dependent upon, a slight infiltration of the arytenoid, and this also has a diagnostic value, but, of course, we must not conclude that this infiltration is necessarily tubercular, and it must be considered in connection with other tubercular symptoms. It is rare that we find patients, or even healthy individuals, whose larynges do not show some infiltration from chronic catarrhal laryngitis. The huskiness dependent upon this condition may not be noticeable to the patient, unless a singer or an actor, but in all cases of suspected tuberculosis the physician should not let this diagnostic symptom be lost sight of.

Dr. E. E. HOLT (Portland, Me.): I think the discussion is in regard to the continuous current. As the doctor was reading his paper I recalled to mind a patient I had some time ago, a lady, who had difficulty with the voice due to an enlargement of the thyroid gland. She consulted me because she was not able to use her eyes. I examined her eyes very carefully, but could find no abnormality there, but I applied the continuous current. She received so much benefit from it that she insisted upon returning, and, to my surprise, the enlargement of the thyroid gland began to diminish. Although she had been under the treatment of competent physicians for that trouble, she insisted upon returning to me for my treatment. I only mentioned this to show the value of the continuous current. I find it useful, not only in preachers and those who use the voice, but also in difficulties of the eyes. I have been able to produce benefits by the use of the current which I have not been able to produce in any other way.

SARGENT F. SNOW (Syracuse, New York). *Modern Possibilities in Chronic Catarrhal Deafness.*

After reporting in detail three of his cases, that gave a history of from ten to twenty-one years, partial deafness, and had been under his care from three to six years, showing a gain in hearing power of from sixteen to two hundred and seventy-six inches, Dr. Snow went on in part to say—

In these chronic cases we are often taught that if, after inflation, the hearing be not improved, or after a course of treatment by generally accepted methods for six weeks, the patient shows no material benefit, the case is hopeless, and it is wrong to encourage him to continue longer. With this point we could take issue, for in most chronic cases of catarrhal deafness a six weeks' course of treatment, such as cleansing the nasal passages by an alkaline spray, inflation of the ear, or the introduction of medicated vapours through the Eustachian catheter, will not, to much

extent, improve the hearing power, whereas a thorough removal of pathological conditions within the nose and adjacent cavities, followed persistently from month to month, and, if necessary, from year to year, by proper stimulating vapours through the Eustachian tube to the middle ear, will, in a good percentage of cases, tone up the parts, and bring, if not a complete cure, happy results.

The question does not seem to be so much whether we have an atrophic or hypertrophic condition, but did the deafness primarily occur as a catarrhal inflammation, or is there so much fixation of the ossicles as to preclude a possibility of relief except through operative procedures?

Many practitioners are opposed to the treatment of deafness in particular, and catarrhal affections in general.

This influence is felt in the families, and in those cases where prompt energetic measures are imperative may become pernicious. Their opposition is honest, and comes from the unfavourable prognosis given by authorities for whom they have great respect. We maintain that the conclusions of these authorities were based on experience obtained under auspices much less favourable than at present; their every effort on the ear was hampered by recurring catarrhal inflammations which, to-day, we can in a great measure control.

DISCUSSION.

Dr. E. E. HOLT (Portland, Me.): I think the Society owes a vote of thanks to Dr. Snow for his paper, as this subject is not generally considered a very inviting one upon which to write. In taking into consideration whether or not this class of patients can be benefited by treatment, I am guided usually by whether or not they are made worse by a cold. If a case of chronic catarrhal inflammation of the middle ear is not affected by cold in the head, there is, in my experience, but little chance of improvement by treatment. There is a class of patients that offer no encouragement; and, in deciding upon these cases, we must take into consideration the family history and hereditary tendencies. I have in my mind a family living in my city; all of them became deaf, and they do not suffer from the ordinary symptoms of catarrh; and any member of this family is not made worse in hearing by cold in the head. I think Dr. Snow's suggestions are very valuable, because most physicians discourage any attempt to benefit patients afflicted with catarrhal deafness, simply because some of these patients are known to be incurable. I think, in the light of modern treatment, that many of these cases can be benefited—can be made to hear better. I did not notice that the doctor said anything about galvanism in his paper. I think if he adds that to his treatment he will be able to help some patients whom he would not be able to improve in any other way.

Dr. JAMES F. MCKERNON (New York, N. Y.): I would like to ask the doctor about the conditions of the tube previous to the beginning of the treatment. Was there any stenosis whatever?

Dr. S. F. SNOW (Syracuse, N. Y.): There was no permanent or protracted stenosis in either of these cases; but I have had several other cases where there was a good deal of stenosis, and I had to stretch them.

These particular cases had no fibrous stenosis. There was almost complete occlusion for a time in the case of the elderly lady; and in the case of the young lady one tube was occluded for a long time, although it finally let up under treatment.

Dr. MAX THORNER (Cinn.): I think Dr. Snow has been unusually successful in the treatment of his cases. I am sorry to say that my experience is not as good. It may be that I have not continued my treatment of cases long enough—not as long as he has. I believe, however, we have to differentiate between the different kinds of cases. If we have obstructions of the nose in these cases, with the naso-pharynx and the Eustachian tubes congested, or their mucosa thickened, we are very likely to improve our patients by removing the obstruction, and by treating the chronic pharyngitis and salpingitis. The judicious use of the probe in the tube is often of benefit in such cases, but patience is required. If we do not succeed at first, we must try again. Good results are also liable to result from the faithful employment of massage of the Eustachian tube. But there is a class of cases which does not offer so much hope to the patients—cases in which an inflammatory condition has run its course, resulting in an atrophic condition of the walls of the Eustachian tube, where the drum-head is retracted, where the chain of ossicles is ankylosed—in short, where sclerosis of the middle ear exists. I do not think we can expect very good results from treatment in these cases. It is my experience that these cases of gradual, progressive deafness offer a very poor prognosis. However, I have gleaned some information from Dr. Snow's paper, which I shall be pleased to try in practice.

Dr. CHAS. W. RICHARDSON (Washington, D.C.): I was pleased to hear Dr. Thorner's remarks on this paper. I think many of us have had cases of gradual progressive deafness which go on from bad to worse in spite of all that we can do for them, in spite of any treatment which we can institute. These are cases of the sclerotic type, attended with sclerosis of the mucosa, ankylosis, fixation of the stapes, and changes in the round and oval window. No doubt all of us have met with these cases where our best efforts are of no avail. We have, of course, many remedies to alleviate, if not to cure these cases, but, in my experience, it has been very hard to hold patients under treatment for any length of time if some good results are not produced to give them courage, more especially when the doctor himself cannot offer much hope from his treatment. I have seen in some of these cases where iodine camphor vapour has been employed a marked increase in all their symptoms. I believe that in certain cases of inflammation of the tube and of the middle ear cavity, the solution Dr. Snow speaks of, and the treatment which he outlines as of value, I think it extremely hazardous to attempt the same line of treatment in the sclerotic cases. I have seen a number of cases where this treatment has been harmful. Of course, as a rule, we only hear of cases where our treatment does good, we do not generally hear of the cases where harm is done; in some cases I have found it decidedly harmful.

Dr. S. F. SNOW (Syracuse, N.Y.): I thank you very much for the kindly way in which you received my paper. One point which I wish to

emphasize is the necessity of doing thorough nasal work in cases of catarrhal deafness. I am more convinced every day that if we do our nasal work thoroughly, good results will come in most cases of disease of the middle cavity, though we must not expect too much the first three or four months after operative work. If we do not cure the nasal trouble our treatment of the ear cavity will be of little avail; our best efforts will only bring temporary improvement. Dr. Richardson speaks of the increase of the tympanitis and in the deafness which sometimes follow the use of camphor and iodine vapour. I have noticed this, but am impressed that it does no permanent harm, the counter-irritant effect actually toning up the membranes, which soon become tolerant, and the patient is in better shape than when started.

Dr. COFFIN: *Deductions from a Study of Unilateral Nasal Stenosis.*

By stenosis is meant that stenosis, partial or complete, arising primarily from a deformed septum.

More air passes through the free side than would if that nostril were of normal patency. The membranes, therefore, act functionally upon more air, and are more open to irritation and possibly to a greater negative pressure.

The free side, from the overwork, or irritation, or both, frequently presents an hypertrophied condition, the membranes of the obstructed side appearing normal or less hypertrophied.

When in the free side we find an atrophic condition, in the obstructed side the membranes appear less atrophied, hypertrophied, or normal.

More advanced disease of the membranes in the obstructed than in the free side is seldom seen.

Reasoning from the above, hypertrophic rhinitis is a result of over-work or irritation, and atrophic rhinitis is a condition following and dependent upon an earlier hypertrophy.

In all inflammatory catarrhal diseases of the nose we should pay proper attention to cleanliness, and remove existing obstructions. Our aim should be to throw less work on the membranes of that organ by seeing that our patients breathe a proper air or by plugging the nares.

The density of air in an open cavity will be modified by the velocity, volume, or direction of a current of air passing over its opening. Inasmuch as accompanying a unilaterally stenosed nose we may have catarrhal disease of either or both ears, we can attribute the change in the ear to the negative pressure produced in the Eustachian tube by the change in the current of air passing over its open end.

DISCUSSION.

Dr. GEO. L. RICHARDS (Fall River, Mass.): A woman, who was treated by me some three years ago, had the most exaggerated case of atrophic rhinitis in one nostril that I have ever seen. There was complete closure of the other nostril, due to a deviated septum. I induced her to allow me to operate upon the septum, and without any further treatment of the atrophic rhinitis she disappeared entirely from my notice for a period of about one and a half years; then she returned. There had been

no treatment except more or less desultory attempts at cleansing. I found entire absence of disagreeable odour, and in the nasal cavities a small quantity of thin mucus, not especially adherent and easily removed. With the re-establishment of normal nasal breathing in each nostril Nature had largely cured the atrophic condition. Where one nostril does all the work atrophy is very likely to occur, and the stenosis of the opposite nostril, if present, should be operated upon to prevent this atrophy, if for no other reason.

Dr. MAX THORNER (Cincinnati, Ohio). *Adeno-Carcinoma of the Nose.*

The author refers to the confusion regarding the nomenclature of nasal tumours. In his paper he wishes to speak about such neoplasms only as are histologically to be classed as adenomata and adeno-carcinomata. The case under consideration is one in which a typical adenoma of the nose developed into an adeno-carcinoma.

The case reported is that of a farmer, aged forty-seven, white, who was referred to the author by Dr. V. T. Churchman, of Charleston, W. Va., Sept. 16th, 1898.

About one year ago he noticed some obstruction in the nasal cavity, which gradually increased, until breathing through that side was absolutely impossible. Four months after he noticed the trouble. The doctor removed a large growth from the nose with a snare, after which breathing was again free for about one month. Then the same trouble re-appeared.

Another large portion of the growth was again removed. He was free for about two weeks, when breathing was impeded again, and two weeks later the left nasal cavity was entirely closed. Operations were repeated in intervals of about one month, with moderate hæmorrhage, and for most of the time were not very painful. His only complaint is obstruction to breathing. Has not lost weight. Appetite good.

The following is the condition upon entrance into the hospital. Man of medium size, fairly well nourished, nothing abnormal to be seen about his face. Hearing in left ear diminished; the left side of nose entirely obstructed by a growth which extends from the vestibule backwards, and fills completely the space between the choana and the Eustachian tube; colour greyish-red, surface uneven, and resembling somewhat a mass of cauliflower, is soft, and bleeds upon touch; origin cannot be ascertained, but it seems to come from the middle meatus, which is completely obliterated. Septum free from growth; no glands enlarged. A large portion was removed with a snare. Microscopic examination proved it to be typical adenoma. Two and a half weeks later nose was again obstructed, and much was again removed. Microscopic examination confirmed the first diagnosis. On October 22nd, under chloroform anæsthesia, an enormous amount of masses were removed from the nose and post-nasal space with snare and curette. Pieces, from the size of a filbert to that of a small walnut, were removed, all being very friable. Microscopic examination of these portions was made by the pathologist of the hospital, Dr. Freiburg. He reported as follows:—"The surface

of the growth is not papillary, but smooth. Lying in a well-developed stroma of young connective tissue, abounding in easily stained nuclei, is seen an enormous aggregation of tubuli of various conformation. Some of these are fairly straight with lumina of small calibre, others convoluted in their course, and others still short with large dilated lumina, reminding one of cystic formation. Here and there is to be seen a typical collection of epithelial cells without evident lumen. The tubuli are lined with a tall cylindrical epithelium, whose nucleus is large and very easily stained. I have been unable to detect anything like cilia of these epithelia. Taken altogether the picture reminds one forcibly of the malignant adenoma of the uterus—I should call it malignant adenoma." On October 29th, one week after the operation, the growth returned, and a more radical operation by temporary resection of the upper jaw was suggested to the patient. The patient refused operation and left the hospital.

A few months after the patient returned home he began to decline. The growth had to be removed every few weeks. On April 25th, Dr. Churchman wrote that he had operated upon the patient eight or ten times since his return, and that the operations had grown to be very painful. General health very bad, sallow complexion. The septum and right side of the nose involved; eyelids œdematous. On April 25th some more masses were removed and sent to the Johns Hopkins pathological laboratory. It was reported to be a typical case of adenoma changing into an epithelioma. The patient was not seen for one week, and then his nose was double its size, and purple; eyes swollen, protruding, and bloodshot; was only able to swallow soft and liquid food. Patient died on June 12th. The following is the history of the family physician who attended patient during his last few weeks:—The growth broke through the wall of the nose at its bridge, from where hæmorrhage took place. The left eye was finally destroyed, and the growth in left orbit measured two and a half inches at the time of death, bleeding at all times. No hearing for ten days preceding death; mind entirely destroyed the last five or six days.

This is a case of malignant disease of the nose, the duration of which is about two years. The question arises whether this was an adenoma that underwent carcinomatous changes, or whether it was not a case of benign tumour, in addition to which there developed later a carcinoma. Adenoma of the nose is looked upon by many as a benign tumour; however, all authors agree upon the possibility, and even on the probability of an adenoma becoming malignant. Pathologists and clinicians mention the manifest malignant tendencies of adenoma of the mucous membranes, and speak of a form of adenoma of the uterus as adenoma malignum. In a still further advanced stage, when the epithelial elements assume the shape of a dense cell conglomeration, we are in the habit, according to Ziegler, to call such a growth an adeno-carcinoma. And with such an occurrence, no doubt, we had to deal with in this case.

Dr. E. W. DAY (Pittsburgh, Pa.): I would like to report a case of naso-pharyngeal sarcoma, in which the results were not good. The patient died from the effects of the operation. The patient was a boy, H. L., aged fourteen years. When he first came to my office there was

marked protrusion of the right eye-ball and cheek. A mass was protruding from the right nostril. The history given by the patient was as follows: Two years previous there had been some trouble in the right antrum, which had been treated by a dentist, with all appearance of cure. The following year a growth was observed to block the right nostril, and an attempt at removal was made by a physician, which resulted in a very copious hæmorrhage that was with great difficulty controlled. A small section of the growth protruding through the nostril was removed for microscopic examination, and a diagnosis of round cell sarcoma was made. As death was inevitable in any case, the father gave permission for an operation, and the tumour was removed by excision of the superior maxillary. The growth had two attachments, one broad and firm attached to the basilar process of the body of the sphenoid, the other thin and ribbon-like coming from the antrum. When the growth was torn loose from these attachments a very copious hæmorrhage of venous blood resulted. The hæmorrhage was controlled very quickly by packing the cavity with pledgets of gauze; but in this short space of time an immense amount of blood had been lost, and the shock to the patient was very great. Free stimulation and intravenous injections of a large quantity of the normal salt solution was used without effect, and the patient survived but a few hours after the operation. The growth was quite large, some eight inches in circumference, and heart-shaped, with the apex at the nose. In the right nasal fossa, the turbinates disappeared from pressure, and the antrum was almost obliterated from pressure on the inner wall. In this growth, extending through the centre, was a very large venous cavity, which would admit the small finger, which led direct to its attachment at the sphenoid, and had almost direct connection with the cavernous sinus at the base of the brain. "The excessive hæmorrhage had come from this large cavity.

Dr. ROBERT C. MYLES: These cases do not often occur, but when presented afford a series of interesting consequences. A few years ago a lawyer was sent to me by a general surgeon for diagnosis of antrum disease. He had been operated upon by a general surgeon, and by a dentist. A clinical diagnosis of a malignant growth was made. I removed a section and Dr. Prudden pronounced the specimen a sarcoma. In the operation by Dr. Wyeth, a portion of the superior maxillary and pterygoid bones were removed, and an artificial jaw inserted. With the exception of a rather disagreeable taste in his mouth, the patient is doing very well. Last year I operated on a woman, fifty years of age, for a growth in the faucial tonsillar region, which three pathologists stated was sarcoma, the fourth was not certain. It extended into the muscular tissue, a very unfavourable symptom. The tumour was removed by deep dissections, exposing the constrictor muscles; this was over a year ago, and the woman at the present time is entirely well. I think if the case had progressed a short time longer, perhaps a month or more, it would have been beyond recovery. Some pathologists claim that these cases of recovery could not have been sarcoma.

Dr. PRICE BROWN (Toronto): I had a case of this kind to report at

Baltimore three years ago, and I speak of it again to-day because the man is still alive without any return of the disease. This was the case of a young man, nineteen years of age, who had had what was supposed to be sarcoma and had been operated upon several times with excessive bleeding, but there was a rapid recurrence after each operation. Pathological examinations were made and the disease was pronounced round cell sarcoma. He was advised to go to Baltimore, which he did, and the final operation was performed in one of the hospitals there. He recovered, and came back to Toronto. About a year afterwards he came to me, and, upon examination, I found a large, solid, hard growth in the right nasal passage. It was about half way back and sessile, and seemed to be growing from the septum vault and the external side. He was bleeding considerably at the time, and I saw an operation must be done soon, and that it could not be operated upon with a snare. I used the cautery. The first time it caused considerable bleeding and I plugged the nostril. At the second operation, two days later, the hæmorrhage was immense. I had to get professional assistance to help stop it. I then used electrolysis, passing one needle through in front and the other behind the soft palate, both of them penetrating the tumour. The seances were continued as long as the patient could bear the pain, and were repeated several times at intervals of one to two days. This had the effect of removing or lessening the amount of the mass, but it became less red in appearance. It practically limited the blood supply. I then again used the galvano-cautery as before. There were a number of operations, perhaps twelve or fifteen sittings in all. Finally, the whole of the growth was removed. All the operations were done under the influence of cocaine. Twice over I had microscopic examinations made of sections. These pronounced it to be fibroma.

Dr. THOMAS H. HALSTED (Syracuse, N. Y.): About three years ago, a man, fifty-five years of age, consulted me because of an exophthalmos of the right side. The eye was pushed upward and outward. There was some pain over the antrum and some swelling. On examining the nose, clear yellow pus was seen coming from under the middle turbinated body, and quite a large mucous polypus, originating apparently from the region of the hiatus semilunaris. Transillumination showed the right antrum and papii perfectly dark, the left translucent. He gave a history of an ulcerated tooth with antral suppuration following, dating back eight years. I diagnosed empyema of the antrum, and, opened through the alveolus, finding comparatively little pus, but the antrum filled with a red friable mass, which under the microscope was shown to be carcinomatous. The microscopical examination of the polypus showed it to be a simple mucous polypus, non-malignant. The point I desire to make is this. Had this polypus been removed, say before the exophthalmos appeared, and before the malignant disease of the antrum was discovered, the case might have been looked upon as a benign growth undergoing, after operation, malignant change.

At the last meeting of this Society, I reported a case of nasopharyngeal sarcoma in a child fourteen months of age.

CHARLES N. COX (Brooklyn, N. Y.). *Chronic Inflammation of the Pharyngeal Tonsil, with little Hypertrophy.*

It is universally conceded that lymphoid hypertrophy at the vault of the pharynx of sufficient degree to interfere with the respiration is productive of harm.

In the typical case, where obstruction is a marked feature, there is no question as to the advisability of complete removal of the growth.

The purpose of this paper is to call attention to those cases in which there is chronic inflammation of the pharyngeal tonsil, with little or no hypertrophy. The condition is analogous to that often found in the faucial tonsils.

It is one of the most frequent causes of naso-pharyngeal catarrh in children—patients subjects to frequent attacks of "cold in the head," which is in many cases not a coryza, but an acute inflammation of the naso-pharyngeal tonsil. Increased liability of such subjects to infection. That condition, known as a "cold," is more often the result of entrance into the system of pathogenic organisms carried into the air tract by dust than that of exposure to cold or damp air.

Frequency of so-called "bilious attacks" in children suffering from this disease, even where there is little hypertrophy. Believed by the author to be a septic process due to infection. Disease attended with more or less general debility and lack of tone; most cases anæmic. Eustachian tube and middle ear frequently involved. Sometimes a very small collection of hypertrophied lymphoid tissue will impair the resonating power of the naso-pharynx to such a degree as to prevent the production of the finest quality of tone. Removal of this little hypertrophy is sometimes followed by most gratifying results in patients who are professional singers. Many cases get well with simple local and general treatment.

The author is not an advocate of indiscriminate and reckless scraping out of every naso-pharynx that presents itself, but maintains that in certain cases of chronic inflammation of the pharyngeal tonsil, even where there is little hypertrophy, removal of that little is the quickest and most efficacious method of treatment, and the one attended with the most lasting results.

DISCUSSION.

Dr. HOWARD STRAIGHT (Cleveland, Ohio): It is easy enough to decide as to the necessity for removal in the marked cases, and the authorities all agree that adenoids should be removed when they obstruct; but I have been treating many cases in which the hypertrophy was slight for a number of years by radical operation, and in the majority of cases I have secured good results. I do not want to go on record as favouring the indiscriminate scraping of the naso-pharynx of every patient who comes under my charge. I know, of course, there are cases in which no operation is necessary; but I believe they are not nearly so common as many suppose. Curetting the cavity of the naso-pharynx, like curetting the cavity of the uterus, is sometimes necessary. It is sometimes difficult to determine whether it is necessary to curette, and I have often been compelled to make a post-nasal digital examination. If I find a much

thickened membrane I curette lightly. I never found very much in the literature of the subject to bolster me up in my plan except a slight reference in McBride, but the paper of Dr. Cox altogether justifies me in what I have been doing for a number of years.

Dr. MAX THORNER (Cincinnati): I wish to say that I entirely agree with Dr. Cox and Dr. Straight. It seems to me that this question ought to be settled once for all. It is not many years ago that some of our text books and monographs on the subject said that if there was a small amount of adenoid tissue, which does not cause obstruction, you need not remove it; and many operators were of the opinion that it is not absolutely necessary to remove at an operation every trace of adenoid tissue. The point which I wish to emphasize is this: it is not the amount of adenoid tissue which should be the guide as to whether or not an operation is necessary, but it is the disturbance which that adenoid growth may cause. This is particularly the case in people who must make professional use of their voices, as speakers and singers, and often in children, where the reflex disturbance may be great, though the amount of lymphoid growth may be entirely out of proportion to the trouble caused by it.

Dr. LEWIS C. CLINE (Indianapolis, Ind.): I wish to congratulate Dr. Cox on his very interesting paper. I would like to ask him to explain a little further as to his method of operating. I think, in all cases, we should satisfy ourselves that we are going to do our patient good by operating before we decide to do so. The time for indiscriminate operating on every case is past. We all know some who operate on every patient, whether or not there is anything to operate upon. Of course, if we have something which is obstructing the nasal passage, we should generally remove it. I frequently remove adenoid growths by degrees—not using anæsthesia, but a little cocaine—and then use the forceps and remove a small portion of the growth. I think I get as good results as those who use anæsthesia and remove the entire growth at once. Although, of course, I know there are cases where it is necessary to use anæsthesia and remove the growth at one sitting; but the gradual method in private practice will produce just as satisfactory results. In curetting we should be very careful about scraping in too deep.

Dr. F. J. QUINLAN (New York City): I thoroughly disagree with the last speaker in making sectional operations. I think that if we have a growth which interferes with respiration, the voice, or with the hearing, it should be removed at one operation in its entirety. I do not approve of the galvano-cautery in these cases. I was not here when Dr. Cox read his paper, so I do not know what stand he took on this question; but it seems to me that the use of the galvano-cautery is a dangerous measure—further, that it seems to me as non-surgical. I do not think there is anything more surgical than the knife, even if you do get a little bleeding occasionally. The worst case of hæmorrhage I ever saw resulted from the use of the galvanic snare. It kept me busy all night and the following day. One other objection to sectional operations, done without ether in children, is that they terrify the child, causing it often to interfere with the movements of the operator.

Dr. PRICE-BROWN (Toronto): I agree with the last speaker. I think, if possible, the whole operation should be done at one sitting. I think this is particularly so in the case of children. In these cases I often do the digital operation, using the finger only. It can be done very well in this manner. You can get a much better idea of the condition existing within the naso-pharynx from the touch of the finger than when the impression has to pass through the curette. In older persons I have used the forceps, but have never found it a satisfactory instrument. I very much prefer the different modifications of Gottstein's curette. Still, even with this instrument, you can rarely complete an operation at a single sitting—a second being required several days later to render the removal thorough. I might mention one case I had in connection with this discussion. I removed almost the whole mass at one sitting. The patient was a prominent singer, and would not permit me to remove any more at that time. The result of the operation was some improvement; but she did not have a perfect voice. Finally, three years later, she came to me again, and I removed the rest. Her voice soon recovered, and it is now practically normal.

Dr. JAS. E. LOGAN (Kansas City): It has not been my privilege to see many cases of chronic hypertrophy in children. I thought the paper referred more especially to those cases found in adult life.

So far as the operation is concerned I do not approve of the galvanocautery. The curette is much better, and better still is the ring knife of Schultz.

I think chronic hypertrophy in the adult is due largely, if not altogether, to diseased pharyngeal tonsil in the child.

Dr. LEWIS C. CLINE (Indianapolis, Ind.): Of course I use anæsthesia in some of my cases for the removal of adenoids. I use it whenever it is necessary. In the majority of cases I do not use it. I do not see where the objection lies to taking off a part of the growth at one operation, and the balance at subsequent operations. I believe with a little bit of training and the right kind of forceps that better results can be produced in this manner without danger of complications. It is my experience that parents submit more readily to the gradual operation. I have had very little trouble with children. Cocaine, in my experience, is all that is necessary. I have been criticised three or four times for doing the gradual operation, but I believe the doctors who criticised me must have never tried my method. I must insist that in many cases removal by the gradual method is preferable.

Dr. ROBERT C. MYLES: I heartily endorse this prolonged discussion on a subject of so much importance. There have been two very radical views expressed this afternoon, and we have listened to some diversified ideas as to the proper methods of procedure. I think that both methods should be employed. I have had cases in which, for many reasons, Dr. Cline's method was pursued, and in others in which a more radical procedure was followed. If one will take the specimen shown by many operators as having been removed from a rhino-pharynx and place it under a microscope, very frequently it will be found to consist of muscular tissue, fibrous tissue, and sometimes even periosteum. The tissue is not

adenoid tissue. As a matter of fact, every case should be studied in itself. Certain cases will require one operation, and some another. What is required is a scientific comprehension of the necessities of each case. There is no doubt in my mind that for the more extensive operations the use of an anæsthetic is advisable. One important factor in these operations is the use of a proper-sized curette, and a sharp one. Passing it well up until it strikes the septum, and then carrying it backward while the attendant holds the head of the patient in a straight position, one can often remove a very large amount of growth with one sweep of the curette. So far as ether is concerned in the operation upon children, it has been my experience that the child dreads the ether more than the operation. Chloroform is preferable, but dangerous.

Dr. CLINE: Do you use chloroform?

Dr. MYLES: There is a strong objection to the use of chloroform in New York City, and I use it only on rare occasions.

Dr. CLINE: Do you operate without anything?

Dr. MYLES: Usually with crystals of cocaine, or a strong solution of ether, gas, or chloroform.

Dr. LEWIS C. CLINE: I do not wish to take up much more time in the discussion of this question, but this discussion recalls one in which I took part. At the last meeting of the Mississippi Valley Medical Association I read a paper on this subject, and upon its conclusion several gentlemen proceeded to criticise the gradual method. After a heated discussion the participants were about equally divided in opinions. After the discussion, one of the gentlemen said to me that if the operation was on his own child he would not permit the radical operation, but in the hospital work, where you wanted to get rid of your cases rapidly, that he would always remove the growth at one sitting. I think either in hospital practice or private practice we can get results by my method if we have the right kind of an instrument, and go at it right. As Dr. Myles says, many children will submit to an operation, either with curette or forceps, rather than submit to anæsthesia. That has been my experience.

Dr. CHAS. N. COX (Brooklyn, N.Y.): Mr. President, I have been very much interested in the discussion, although it got pretty far away from the subject of my paper, and for the benefit of some gentlemen who did not seem to understand just what my subject was, I will say that I took the liberty of changing the title to *Chronic Inflammation with Little Hypertrophy*. I am not prepared to dispute the statement of Dr. Logan that all of these cases must be the result of original disease in childhood. As to my methods of operating, I think, perhaps, the personal equation enters very largely into all operations. Some surgeons may be so skilful as to remove these slight hypertrophies with the forceps without anæsthesia, without causing a great deal of pain to the patient. I have sometimes in adults, without anæsthesia, removed the growth during several sittings. In children I never do. I always operate with anæsthesia, usually chloroform, patient in horizontal position, using a Gottstein curette, or some modification thereof. In addition to that I always pass my finger well in to see that I have completed the operation, and not left any fragments or small portions.

JAS. E. LOGAN (Kansas City, Mo.): *Acute Suppuration of the Middle Ear.*

T. H. HALSTED: *Recurrent Papilloma of the Larynx* (Reports of two cases in which Alcohol was used in the Treatment).

Two cases of recurrent papilloma of the larynx were reported. Intra-laryngeal operations were repeatedly done, and alcoholic instillations were employed between the operations. In one case the alcohol appeared to have a very decided effect in restraining the recurrence of the growth; in the second case, no effect was apparent.

Case I. Mrs. C., aged thirty-four, wife of a physician, contracted a laryngitis in 1891. The patient was a singer, and continued singing during the acute inflammation of the larynx. After the acute symptoms had subsided hoarseness remained. Notwithstanding this, for two years the patient continued her church choir work. In 1894, being very hoarse, she consulted the writer, who diagnosed a papilloma of the right vocal cord. The tumour was sessile, papillomatous, larger than a split pea, and occupied the middle third and upper surface of the right vocal cord. Its removal was advised, but the patient being pregnant, refused operation for the present. She did not return till December 30th, 1896, when there was complete aphonia, no dyspnoea, but a dry, paroxysmal cough. General health good. The tumour, purplish-red in colour, covered the anterior two-thirds of the right cord, extending to the anterior commissure, involving the upper and under surface of the cord. The growth was removed with Mackenzie's forceps.

There was great difficulty in the first and all subsequent operations in entering the larynx with any kind of forceps. Cocaine in fifteen to twenty-five per cent. solutions was used freely, but a spasm of the larynx was almost sure to be precipitated at the mere approach of the forceps to the mouth, and the patient was unable to control this. The bromides and morphia were given internally to lessen the general sensibility, but without any appreciable effect. This high degree of irritability of the larynx was a serious factor in the treatment throughout. Within ten days of the removal of the papilloma it recurred, and was again removed. Tincture ferri. chlor. was applied with applicator, but, despite this, the growth returned with great rapidity, and tended to extend. At the end of the first two months, during which time at least a dozen sittings and operations were done, the growth was much larger than at the beginning. It now involved both cords. Further operations during the next month were desisted from, as operative interference appeared to merely stimulate the growth to renewed activity, and, instead, alumol was sprayed into the larynx several times daily, without any evidence of relief. Later alcohol was used as a spray, and a one to two hundred solution of Formalin was applied with applicator for a few days, but had to be given up because of the great discomfort. Meanwhile the growth was increasing steadily, so that at the end of three months the neoplasm involved not only both cords, but was sprouting from the interarytenoid fold. The voice was completely aphonic, and on exertion there was slight dyspnoea.

The tumour was again removed in two or three sittings, but a fresh growth followed so rapidly that by the first of May the papilloma was larger than ever. The patient consulted Dr. Charles H. Knight, of New York, and remained under his care for ten weeks. Dr. Knight's diagnosis was simple papilloma, and his treatment at first was removal with Dr. Mackenzie's forceps, finding the same difficulty in entering the larynx as had been found by the writer. He stated that he had never seen a larynx so irritable, and endeavoured to render the larynx more tolerant by internal use of the bromides and morphine. Locally, cocaine in twenty-five per cent. solution. The growth continued recurring, gaining steadily, until it soon filled the larynx, and alarming attacks of suffocation became so frequent that he feared tracheotomy would soon be demanded. He now began instillations of absolute alcohol, twice daily, into the larynx, and in a couple of weeks noticed that there was a shrinkage in the growth between operations. The patient returned to Syracuse at the end of two weeks. She was now having constantly difficulty in breathing, with at times suffocative attacks, but not so severely as three weeks before, and there was a steady improvement in breathing. The larynx was filled with the papillomatous growth, the cords could not be seen, and there was apparently three times as much as there had been ten weeks before. At this visit as much as half a teaspoonful of the neoplasm was removed, and the alcoholic instillations were continued twice and three times daily as Dr. Knight had begun them. Twice a week for three weeks the growth was removed, as much as could be each time, until at the end of this period the larynx was entirely free, excepting for a thickening, no larger than a pin's head, at the posterior ends of each cord. The voice, though somewhat rough, was clearer than in seven years, and the breathing was perfectly easy. During this latter period of operation when the alcohol was being used there was at no time any increase of the neoplasm between the operations, as there had always been in the first three months when the alcohol was not used so thoroughly and systematically. The alcohol was continued for two months longer. At the present time, nine months since the last operation, the condition remains unchanged, the voice being somewhat rougher than normal, and the breathing perfectly free.

Case 2. Florence G., aged three years, was brought to the writer on April 30th, 1896, because of supposed asthma. Breathing laboured and loud. At times, especially at night, paroxysmal dyspnoea caused cyanosis and alarming suffocation. Voice aphonic. Patient had been perfectly well, and had no laryngeal symptoms until five months before, when hoarseness, followed soon by paroxysms of dyspnoea, began, and has steadily grown worse. On laryngoscopic examination, a pale, pink mass, papillomatous, apparently originating from the left side, was seen. It almost filled the lumen of the larynx, and obscured the vocal cords. A diagnosis of papilloma was made. The patient was placed in the Women's and Children's Hospital, and on June 1st, breathing becoming more laboured, tracheotomy was imperatively demanded, and the operation was done under chloroform. The papilloma was removed by a small

pair of Mackenzie's forceps, but the neoplasm soon recurred. Alcohol was sprayed twice daily into the larynx, but the growth continued increasing. It is now two years since the tracheotomy was done, and at no time has the larynx been free of the tumour so that the tracheal cannula could be dispensed with. During the first three months, under chloroform, the papilloma was removed three times but soon recurred after each operation. All operative interference was desisted from for the next nine months; rest afforded the larynx by the tracheal cannula being also depended upon. At the end of this time, there being no improvement, the growth was again removed as before, and absolute alcohol dropped into the larynx twice a day. During the past year, under chloroform, there have been four operations, each time more than a teaspoonful of the warty growth being removed. The alcohol has been kept up by the nurse during all of this time. There has been no improvement whatever, the papilloma being now larger than ever, extending down below the cords and into the tracheal opening, and above it fringes the epiglottis. The question which now presents itself is as to the advisability of doing thyrotomy with a thorough curetting of the base.

DISCUSSION.

Dr. S. E. SOLLY (Colorado Springs, Colorado): I have used absolute alcohol in cases of papilloma of the larynx with marked success. My colleague, Dr. Gildea, and myself have been using it with success for the last year. The cases of papilloma to which I refer have not been severe like those reported; they have been present in tubercular patients, were rather small, but very troublesome. Very often, of course, papillomata require surgical interference, but the alcohol spray appears to limit their recurrence, and to cure the slighter cases. The patients themselves can use the treatment.

Dr. JOHN O. ROE (Rochester, N.Y.): I have used alcohol in some cases of papillary growths of the larynx with gratifying success. Recently I have been using nitrate of silver in connection with the alcohol, and the two used together seem to produce a better result than either one used alone.

In a case that I have recently had under observation the effect of this method was very marked. The growth occupied the anterior two-thirds of both vocal cords, extending somewhat into the ventricles. I first removed the growths as thoroughly as possible with laryngeal forceps, and then applied alcohol ninety-five per cent. with a cotton applicator. In a short time afterward I applied a solution of nitrate of silver, eighty grains to the ounce. This was repeated every third or fourth day until all the thickening of the cords and the portions of the growth that could not be well engaged in the forceps had disappeared.

The alcohol in these cases seems to have a marked effect in causing the growth to shrivel up, and produces at the same time a blanching of the tissue, and also acts somewhat as a local anæsthetic. The silver applied afterwards increases these effects and destroys the growth with-

out the irritation of the larynx that is produced when the silver is applied without the alcohol.

Dr. CHAS. W. RICHARDSON (Washington, D. C.): I think the doctor will pardon me if I suggest that his paper would have been more clear if entitled "Recurrent Papilloma of the Larynx." All papilloma do not recur, while others recur, and recur, and recur. I have had cases where, upon the first examination, I have found one or two little spots of papillomatous tissue, and after a week or two the papilloma is here, there, and everywhere. Such cases are very hard to manage. You may remove the growths until you have the larynx perfectly clear, no point that seems diseased, and the patient's voice almost perfectly clear, and in a few weeks the trouble is as bad as ever again. I have at the present time three cases. I have tried alcohol many times, but without much benefit. I have tried lactic acid with benefit. I do not know whether the lactic acid did good or whether these cases improved themselves. I rather think these cases are sometimes self-limiting. They recur and recur until they lose all tendency to recur and cease. I have obtained very good results from the employment of lactic acid, but am not prepared to say that its use was merely coincident with the improvement, and not the cause of it. I tried alcohol in some of these cases with no good result, and I have tried it in other cases with apparent benefit. In the three cases which I have now under my observation there has been no recurrence. One was operated on last September, one about Christmas, and one last March.

Dr. ROBERT LEVY (Denver, Col.): I have had a number of cases of papilloma of the larynx, and have tried alcohol in the treatment, but have never been fortunate enough to remove the papilloma except by the intralaryngeal method, except in one case in an adult. However, in children, I have in mind five cases, three of which I have already reported, and two are still under observation. In four of these I used alcohol without any benefit. Upon two of them I performed tracheotomy and curetted the larynx. In some cases I use chromic acid or some caustic preparation in the same manner as you rub acetic acid on a corn, and place the larynx at rest. I cannot see the advantage of absolute alcohol in children. I must say that my success with it has been very limited.

Dr. F. H. KOYLE (Hornellsville, N. Y.): I removed large multiple papillomata from the larynx of a nine-year-old boy in 1896. I removed the growths several times by the endolaryngeal method. I then intubated him for some time with negative results. After a preliminary tracheotomy, a high laryngotomy was performed. The neoplasm proved too tough to be removed by the most vigorous curettage, and was dissected out with the knife. It involved the entire larynx, including the vocal cords, which were necessarily removed with the neoplasm. The actual cautery was then applied to the entire denuded surface and the larynx packed with gauze. The boy made a good recovery, and since that time has worn a tracheotomy tube. The parents declined further treatment, although a subsequent operation was advised; so I have not examined him for more than a year. I have seen him around the streets, and he appears rugged. He speaks

in a whisper, and one can easily distinguish what he says. He seems to suffer very little discomfort from the presence of the tube.

Dr. CURTIS : Why was the actual cautery used ?

Dr. KOYLE : In order to destroy the submucosa, as well as the mucosa, and thus effectually prevent the return of the growth. A month after the operation, however, the growth was recurring. Since that time I have not examined him.

Dr. CURTIS : It strikes me that it is unreasonable to do an operation in that way. I do not think this method a surgical one. It would have been more successful if he had done a thyrotomy.

Dr. JAMES P. MCKERNON (New York City) : I have used alcohol in five cases, but no favourable results whatever. All were adults, who refused operation. Two of them have since been operated upon by the endolaryngeal method, with no recurrence as yet in either of them. One of the other cases passed out from under my observation. Two cases still refuse operation. I used the alcohol instillation very faithfully, but with absolutely no favourable results in lessening the size of the papilloma. I think, in the recurrent cases, that a primary tracheotomy, followed by a thyrotomy, ought to be done in order that the growth may be thoroughly removed.

Dr. T. H. HALSTED (Syracuse, N. Y.) : These cases which I report were, as Dr. Richardson says, recurrent. They were sessile, and originated from the whole surface of the larynx. I have used lactic acid after operating without, however, observing any result. In Dr. Koyle's case I should fear that the adhesions following the galvano-cautery would be as bad or worse than the disease. With reference to alcohol in these cases. In that of Mrs. C. it seemed to have a restraining influence, but it was the forceps that removed the growth. In that of the child I have up to now seen no benefit from intralaryngeal operations, rest afforded by the tracheotomy, or alcoholic instillations. I was anxious to hear a discussion as to thyrotomy with curettement in this case.

SOCIÉTÉ FRANÇAISE D'OTOLOGIE, DE LARYNGOLOGIE ET DE RHINOLOGIE.

May 4th, 1898. (Continued from p. 555.)

E. B. WAGGETT, from the Report in "Arch. Internat. de Laryng., Otol., Rhinol.," May, June, July, August, 1898.

M. LANNOIS, *President, in the Chair.*

Contribution to the Study of Nasal Syphilis.

M. VACHER (Orleans) advocates the use of free post-nasal mercurial irrigations, coupled with iodide and mercury internally. He reports a case of extensive tertiary disease of the nose occurring during gestation.

Active treatment was employed with good results, a living infant being born at full term.

A Case of Rapid Tracheal Stenosis.

M. TEXIER (Nantes) described the case of a boy of fifteen, who was suddenly seized during a meal with an attack of urgent dyspnœa, with loss of consciousness lasting half an hour. The following night was passed without trouble.

Examination showed an air passage perfectly normal, with the exception of a narrowing of the trachea at its lower end. This was caused by the posterior wall bulging forwards, the lumen being reduced thereby to half the normal and thrown into an oval form. No evidence of an intrathoracic lesion could be made out by physical examination.

The following evening a second laryngoscopic examination showed increase of stenosis with redness of the mucosa. Next morning urgent dyspnœa recurred, and tracheotomy was performed. A large drain tube was thrust through the narrowed part, but this speedily became flattened, and the patient died. No *post-mortem* was made. As œsophageal symptoms were absent the author thinks that disease of a tracheo-bronchial gland may have caused the stenosis.

M. BOULAY. *Maxillary Sinusitis with Diverticula and Partitions.*

There are two chief forms of diverticulation :—

1. Those produced by the vertical partitions described by Zuckerkandl and others. In two cases examined the cavity was subdivided into two compartments in five instances.

2. Diverticula formed by extension of the cavity beyond its normal limits : (*a*) forwards towards the canine teeth ; (*b*) inwards towards the intermaxillary suture of the palate process ; (*c*) a zygomatic prolongation. The partitions are particularly apt to occur when abnormal diverticula are also present.

The author cites two cases in point. In one case with all the evidences of antral empyema the sinus was perforated through the alveolus. Pus came away through the opening, but on irrigation the fluid returned almost clear through the nose. Careful inspection showed the pus to come from a small opening made by the trephine, through which a probe could be passed into a large zygomatic recess cut off (apparently completely) from the antrum by a bony septum. It is uncertain how the pus from this recess reached the middle meatus.

In the second case the patient complained of the passage of pus into the naso-pharynx, and of a depression of the hard palate on one side. No pus could be seen in the nose. On the removal of a large septal spur pus was seen to issue from the floor of the nose, and a large cavity occupying the palate process and full of pus was detected. This cavity was shut off from the nasal passages by a partition, and was so placed as practically to occupy the position of a normal inferior meatus. The sloping internal wall was in close contact with both the spur and the inferior turbinate. On the sound side a very similar conformation was found, and both cavities were presumably of congenital origin.

DISCUSSION.

M. LERMOYEZ had scraped the antrum in one case on two occasions without producing cure. During a third operation he accidentally discovered a small aperture leading into an isolated portion of the antrum, the purulent condition in which had doubtless reinfected the latter after the previous operations.

M. MALHERBE. *Clearing out the Petro-Mastoid: New Surgical Method for Chronic Otitis Media Sicca.*

The operation should only be undertaken when the internal ear is in a useful condition, and when the fenestræ of the labyrinth are not sclerosed. Consequently the cranial conduction should be good and the perception of high notes by air conduction not much impaired. As to prognosis, the operation will cause improvement for high notes, and subjective noises will disappear or progressively diminish in intensity.

DISCUSSION.

M. CASTEX agreed with the author in thinking the tuning-fork tests to be often fallacious. He had obtained good results by removing the malleus only.

M. LERMOYEZ regretted that the centripetal pressure test had received no mention as a diagnostic method of the greatest importance. Before removing the ossicles the membrane should be perforated and the former examined. If the chain was found in good condition, the drumhead, probably the cause of the deafness, should be removed and with a hope of good results. Before pronouncing upon the value of these operations we must wait for ultimate results after a prolonged interval.

M. MOUNIER thought preliminary examination of the ossicles through an artificial perforation was desirable. Where the watch was not heard except when almost in contact, no appreciable improvement was to be hoped for.

M. MIOT employed exploratory paracentesis. He believed improvement possible when hearing by aërial conduction was absent.

M. CASTEX: Preliminary testing should be repeated several times.

M. BONNIER found Rinnie's test fallacious.

M. MALHERBE thought ablation of the malleus more serviceable in the sequelæ of purulent otitis.

M. LERMOYEZ. *The Facial Nerve takes no part in the production of Paralysis of the Velum Palati.*

Classical anatomy maintains that the velum is innervated by the facial through the great superficial petrosal. Herein anatomy is in error, and physiological experiment has shown that intracranial stimulation of the facial is never followed by contractions of the palate. On the other hand, such contractions can always be produced by stimulation of the inferior bulbar roots of the vago spinal.

Passing to clinical evidence we may ask, Does paralysis of the palate occur when the facial is intact and the vago spinal diseased? The answer is proved affirmative by many well-observed cases. The author can now bring forward a case with *post-mortem* evidence. The case was one of

laryngeal cancer with secondary glandular affection seated high up in the neck. On the left side there was paralysis and atrophy of the tongue, complete hemiplegia of the velum and two corresponding pillars; paralysis of the left vocal cord, and absence of any facial paralysis.

Autopsy showed an intact facial nerve. The roots of the Xth., XIth., and XIIth. nerves on the left side were involved in the growth. No nerve degeneration could be made out microscopically in any part of the facial, or of the great superficial petrosal.

A second question remains. Do you find hemiplegia of the velum when the vago spinal is intact and the facial diseased? Among one hundred cases of facial palsy Gowers found but one case of velar paralysis, and that on the opposite side to the facial lesion. Many authors have claimed to observe velar paralysis corresponding with facial palsy. Their conclusions have been arrived at through insufficient observation. Many are content to see hemiplegia when there is merely a deviation of the uvula and flattening of one arch. Such a distortion is exceedingly common, and a small amount of tonsillar hypertrophy will easily produce it. Finally, it may be said that both pathology and physiology prove the velum to be innervated by the vago spinal and not, as maintained by anatomists, by the facial.

DISCUSSION.

M. ESCAT mentioned a case of recurrent nerve paralysis associated with hemiplegia of the palate on the same side. Further, the patient noticed that pressure on the tragus of the same side produced tickling sensation in the throat and cough. This combination was suggestive of disease of the vagus.

M. BONNIER believed that the velum had a vagal innervation corresponding to its respiratory function, and a facial corresponding to its deglutational function. The appearance of paralysis of the velum, usually coming on late in an attack of facial palsy, was due to neuritis spreading up to the geniculate ganglion.

M. LERMOYEZ, in answer to M. Bonnier, stated that he considered clinical facts supported by autopsy must overrule a theory founded many years ago on hypothesis.

M. MOUNIER (Paris). *A Case of Foreign Body in the Left Nasal Duct with Radiographic Evidence. Forty-two years' duration. Removal.*

The foreign body was a cannula passed into the nasal duct for some eye trouble. A portion was removed, and later, a second portion, detected by radiography, was with difficulty brought away through the nose.

M. COLLET (Lyons). *Disturbances of Hearing and Smell of Central Origin.*

A case of Bright's disease with left side hemiplegia and hemianæsthesia. Abolition of hearing and hemianopsia left side. Loss of smell right side. Autopsy showed softening of the right hemisphere involving the internal capsule, the two segments of the lenticular nucleus, and reaching deep into the frontal lobe. This observation is proof of—

1. Hemianopsia due to a capsular lesion.
2. A capsular lesion destroying the hearing on the opposite side. The decussation of auditory fibres has hitherto been almost destitute of clinical evidence.
3. The olfactory fibres do not decussate, or at all events the majority of them.
4. A means of diagnosis is afforded between sensorial hemianæsthesia of hysterical and of organic origin. With an organic lesion smell and hearing are lost on opposite sides.

DISCUSSION.

M. COLLET, in answer to M. Molinié, stated that both before death and at the autopsy the ears were found to be perfectly normal in appearance.

M. NOQUET (Lisle). *A Case of Subjective Parosima.*

The case of a man of fifty-two who for six weeks complained of a very disagreeable putrefactive smell. Some hypertrophy of the middle turbinates was found on both sides, these bodies coming in contact with septum, but no other lesion was present. After reduction with the cautery the parosima entirely disappeared.

Remarks on Phonation.

M. PIERRE BONNIER commences by criticising the work of other authors, and particularly of Lermoyez, who, making use of the cadaver, have divided and put out of the question all the extrinsic muscles of the larynx; and, moreover, acting on the hypothesis that the arytenoid is held fixed as to position on the cricoid, have artificially imitated such fixation, and thereby put on one side all the intrinsic muscles possibly engaged as tensors of the cords, with the exception of the crico-thyroid and thyro-arytenoideus internus. Normal phonation is a phenomenon depending on an elaborate combination of muscular activity such as mere physical experiments on the dissected larynx can never demonstrate.

In the first place expiration is attended with elevation of the trachea and cricoid, a movement which tends to tip the thyroid forward. In order to maintain the mutual relation of the cricoid and thyroid during phonation, the thyroid is raised by the elevators of the larynx to prevent such tilting. Some cases of hysterical aphonia and of the eunchoid voice are due to disturbance of this action of the elevators.

Secondly, the tilting of the thyroid, *i.e.*, the changing of the relative position of the anterior and posterior insertions of the cords, does take place in a variable sense and degree in passing from one note to another. This is the work of the extrinsic muscles.

As to the movements of the arytenoid cartilage, these have been obscured by an erroneous hypothesis, which makes them pivot upon the cricoid round a vertical axis. For such movement the capsule and the articular surfaces are quite unfitted, and careful consideration of the parts will show that the true movement is one of a see-saw character, the arytenoid rocking inwards and outwards upon the cricoid. It is easy

to convince one's self of this motion by observing with the laryngoscope, while the subject makes an effort to close the glottis without phonating, so that on expiration merely a sighing sound is produced. When this effort is made the cords are approximated without becoming tense, the free borders moving downwards and inwards, like closing shutters, until they come in contact. The arytenoids are seen not to rotate, but to lean towards each other until their summits meet at a point anterior to their position in simple respiration.

Passing to the action of isolated muscles, the author maintains that this rocking movement of the arytenoid compels us to take a new view of the action of the crico-arytenoideus lateralis and posticus. These together must now be looked upon as a muscular loop, the two parts of which are joined and inserted at the processus muscularis. As the point of origin of this loop is internal to the point of insertion, contraction of the muscle as a whole must draw that point downwards and inwards, so that the vocal process is tilted upwards and outwards, elevating and abducting the cords. The external thyro-arytenoideus draws and tilts the cartilage forward and inwards, while the oblique bundles of the inter-arytenoideus brings the apex of the arytenoid towards the middle line, and so assists the former muscle. These two together adduct and lower the cords in antagonism to the crico-arytenoid loop; an antagonism which is the physiological rule for all muscle actions of a delicate character.

In the phonation of those notes which in a given subject are uttered with the least effort, the *pomum Adami* is found to be what may be called in a position of rest in the neck; while the cords are adducted, with slightly concave borders, the cartilaginous portion of the glottis open—as in expiration—and the ventricular bands well apart. If the tone is now lowered, the *pomum Adami* is depressed and retracted, the vocal processes retire, the glottic (ligamentous) chink narrows, and the cords appear to shorten. If a higher note is taken, the *pomum* ascends and comes forward, the vocal processes meet so as to close the cartilaginous glottis, the ligamentous glottis broadens, and the cords appear to lengthen. In considering the change in apparent length of the cords, one must remember the foreshortening effect produced by the departure from the horizontal resulting from the tilting of the thyroid. The cartilaginous glottis becomes narrower as the tone ascends, and also as the intonation is increased in intensity.

As to the mode of vibration in the cords, it is at once noticeable that this is not comparable with that which occurs in a reed or a thin membrane. The cords have a prismatic section, and are quite unsuited for a degree of vertical vibration—even at the extreme border—capable of producing a loud note. Indeed, experiments undertaken on the cadaver, with cords so stretched as to allow only of vertical vibration, have proved the sounds so produced to be of a very feeble character—not even equalling in intensity those of a caoutchouc membrane. The vibrations take place in reality in a transverse sense, and in a plane almost horizontal, the free borders being thrust apart and only in a very subordinate degree elevated by the expiratory current. Hence it is that these vibrations are

visible in the mirror, which would not be the case in the same degree if they took place in a vertical sense.

As to the active tension of the cords, let it first be said that none of the rigid parts involved (the thyroid, cricoid, and arytenoid) are in any way mechanically fixed upon one another. The fixation, which is a necessary factor in bringing the cords into a state of tension, is not a mechanical but a muscular fixation; and, in the production of this tension, all the musculature of the larynx, intrinsic and extrinsic, are directly or indirectly concerned. The opposing forces of the whole muscle apparatus must come into a certain form of equilibrium, in order to maintain the cords at any given tension. For instance, the crico-thyroid may not truly be described as the tensor of the cords—for, without the action of the crico-arytenoid groups, it could bring no force to bear upon the vocal processes of the arytenoids. It is merely one link in a muscle chain, each link of which, whether tensor or relaxer, must be at work for the production of any given tension of the cords.

How does the tension of the cords affect the intonation where lengthening of the cords clearly cannot explain the phenomena? The explanation of the increased periodicity of the transverse vibrations requires a consideration of the internal thyro-arytenoid. Unable to draw the point of insertion, the tense edge of the cord, towards the point of origin, the net result of contraction in this muscle is not to narrow the cord, but rather to harden its consistency, the precise method by which an increase in the transverse elasticity of the cord could best be accomplished. The thyro-arytenoideus internus clearly could not in this manner bring about any changes in the periodicity of oscillation was not the cord held at the same moment in a suitable degree of tension.

The sound is then dependent upon the mutual conflict represented by the elasticity of the expired air and of the tense cord, and the aërial vibrations are the outcome of this conflict, and their periodicity depends upon the elasticity put into play both on the side of the air column and the vocal cords. The edges of the cords do not appear in any part of the register to come into actual contact (certainly do not do so in the falsetto), and partially cutting through the column of expired air gives it, as it were, a moniliform shape, "a row of gaseous beads of which the component parts are not isolated, but remain in continuity."

This paper cannot be adequately dealt with in a short *précis*, and should certainly be read in the original ("Arch. Internat. de L. O. R.," July, August). Several points of the first importance are introduced—the rocking and not pivoting motion of the arytenoid, the combined crico-arytenoids as abductors, the thyro-arytenoideus externus and inter-arytenoideus as adductors, the crico-thyroid and extrinsic muscles as stretchers of the cords, the change in elasticity due to the internal thyro-arytenoid, the lateral and not vertical mode of vibration of the cords, all these are points which, for their consideration, demand an examination of the author's work at first hand.

DISCUSSION.

In reply to M. Castex, M. BONNIER re-asserted the horizontal mode of vibration.

M. LERMOYEZ upheld M. Bonnier on this point, and stated that with the laryngostromboscope such a mode of vibration could be observed, the glottis alternately opening and shutting, while the cords undulated in the horizontal plane.

Dr. GEORGES GELLE (Fils). *A Curious Case of Hysterical Deafness.*

The case of a girl of thirteen, with practically normal ears, who, in consequence of a fright, was suddenly seized with complete bilateral deafness. A curious point to note is that on many occasions the hearing was restored for a few minutes by Politzerization, the centripressure test and spinal douches. Presumably the explanation is to be found in M. Binet's theory, that these sensory anæsthesia are due to mental distraction, and that the applications of the various tests, etc., aroused the will to hear.

M. MALEN. *Instruments.*

A galvano-cautery snare with automatic curve. An elevator of the velum to be introduced through the nose.

M. L. BAR. *Laryngeal Polyp.*

A description of two cases of papilloma, one fibroma, one cyst, one fibromyoma, one adenoma, operated by the author.

M. A. COSTININ (Bucharest). *The Treatment of Malignant Tumours of the Larynx, Tongue, and Nose, with Arsenious Acid.*

Not yet reported.

MEETING, May 5th.

Pseudo-membranous Rhinitis.

M. CARTAZ related such a case occurring in a healthy man of thirty-seven, who had syphilis ten years previously. The left nose only was affected, and was obstructed by firm, adherent exudate, which speedily returned after removal.

The short form of diphtheric bacillus was demonstrated. After prolonged and ineffectual treatment, some iodide was given and the condition speedily cleared, leaving an ulcer on the septum. Was the syphilitic affection present from the first, or was it excited by the diphtheritic rhinitis?

M. POLO (Nantes). *On the Opportune Moment for Opening the Mastoid.*

When cerebral symptoms are absent, and where mastoid swelling is not well limited, it is well to watch the case, and before performing an operation not unattended with danger.

DISCUSSION.

A short discussion took place as to the relative merits of ice, fomentation, and leeching.

M. MOLL (Arnheim). *Anterior Epiglottic Angina.*

Small abscesses appeared on the epiglottis and glosso-epiglottic folds.

MM. LANNOIS and TOURNIER (Lyons). *Agoraphobia and Ménière's Symptoms.*

Agoraphobia like other phobias is a constantly recurring dread which besieges the mind of the neuropath on the repetition of some particular class of circumstance. It is easy to see that an occurrence of vertigo in a public place may well give rise to agoraphobia in one predisposed to such a neurosis. This idea has been followed by the examination of a number of agoraphobics and also ear patients, and the authors have found the combination present in a dozen cases.

DISCUSSION.

M. ESCAT : In some subjects there is an agoraphobia due to a degree of vertigo. It is not a psychic emotion but fear provoked by a real sensation.

M. LANNOIS : Besides the neurosis, there is another agoraphobia which is not imagination, but rests upon a basis of experience.

Tumour of the Auricle.

M. LANNOIS showed a photograph of a tumour the size of a mandarin, situated in the superior concavity of the helix, and of six years' duration. It was described as an adeno-epithelioma of sebaceous origin.

Dr. SUAREZ DE MENDOZA. *New Operative Proceeding for Nasal Obstruction.*

A preliminary note to introduce further work upon the use of the circular saw in the nose. Two longitudinal cuts with the saw will remove a wedge from a deformed septum or encroaching inferior turbinate, and so restore a serviceable passage.

MM. ALBERT ROBIN and MENDEL. *Treatment of Tinnitus with Cimicifuga racemosa.*

The authors have used this drug, the action of which somewhat resembles that of digitalis, with excellent results. Twelve cases of ear disease of various kinds, associated with intense tinnitus were employed, and of these, nine were relieved of the symptom within a day or two of commencing the drug ; in some instances the tinnitus returned on cessation of the treatment. In three cases of five, ten, and forty-eight years' duration no result was obtained.

The mean dose of mxxx of the extract was employed daily.

M. MALHERBE (Paris). *Chronic Posterior Pharyngeal Catarrh and its Treatment by Curettage.*

Not yet reported.

Simple Process Permitting of Resection of the Deviated Cartilaginous Septum without Perforation.

M. ESCAT's method consists in detaching the mucous membrane from

the concavity by hydraulic dissection, *i.e.*, by injecting fluid through a curved hypodermic needle between the cartilage and mucosa.

The projecting portion is now cut away with the bistoury in the ordinary manner, while the mucosa of the concavity is held well out of harm's way by the injected fluid. In one out of five cases this hydraulic dissection failed to occur. The whole operation may take five minutes, and cocaine is employed. Gauze soaked in sterésol (antiseptic hæmostatic and occlusive) is recommended for packing.

DISCUSSION.

In answer to M. Cartaz, M. ESCAT said there was little danger of making too extensive a dissection.

M. LUBET-BARBON considered the removal of the perichondrium of both sides a distinct advantage.

M. BONAIN (Brest). *Local Anæsthesia for Operations on the Tympanum.*

Anæsthesia of the external face of the drum-head with a mixture of phenol, menthol, and cocaine left in contact for two minutes. This caused slight cauterization. Incision was then to be made, and ten per cent. of cocaine injected through Hartmann's cannula.

M. LE MARC HADOUR. *Acute Epiglottic Abscess.*

The case of an old man who came into hospital with what appeared to be an attack of œdema glottidis. Examination with the tongue depressor showed a yellowish spot on the anterior surface of the enormously swollen epiglottis. Pus was liberated by incision, and recovery speedily followed. This is the first instance of the kind that the author has found in literature.

M. GEORGES LAURENS. *Chronic Abscess of the Velum.*

This discharged through the supra-tonsillar fossa.

MM. MOURE and LIARAS. *Treatment of some Facial Palsies of Otic Origin.*

Treatment must vary with the seat of the lesion and the electric reaction. Unfortunately precise indications are not to be found in either direction, for the involvement of branches obscures the exact limits of the trouble, and the reaction of degeneration does not always indicate a hopeless case. Where the cause of paralysis is the presence of dead bone, operation is indicated. A careful dissection of the nerve is not called for, but if a thoroughly complete mastoid operation is performed a good result will follow in favourable cases.

DISCUSSION.

M. FURET had sutured the peripheral end of the facial to the trapezian branch of the spinal accessory. Some tonicity seemed to return to the facial muscles, but the result was not brilliant.

Buccolingual Lencoplasia. Co-existence of Lingual and Cutaneous Psoriasis.

M. LACARRET (Toulouse) discussed the etiology of these cases. In

his opinion leucoma might represent an arthritic diathesis, or be merely due to mechanical irritation.

Histological Investigation of Laryngeal Polyphus.

M. BRINDEL (Bordeaux) gives statistics of thirty-three benign laryngeal tumours examined during two years.

Singing Lessons for Deaf Mutes with some Remnants of Hearing.

M. HOMONDE FONGERAL, after seven months' trial, finds these a considerable aid towards the acquirement of speech.

ABSTRACTS.

MOUTH, &c.

Bernhardt (Berlin).—*Rhythmical Contractions of the Velum Palati.* "Deutsche Med. Woch.," July 28, 1898.

BERNHARDT showed a woman, thirty years of age, to the Society for Internal Medicine in Berlin. She had for several weeks had contractions of the whole velum palati, the palato-glossal and palato-pharyngeal arch, the posterior pharyngeal wall, and the base of the tongue. The contractions were one hundred to one hundred and twenty per minute, usually regular, but occasionally ceasing temporarily. She complained also of dull pain on the vertex and occipital region, with pains and noises in both ears. At one to two feet distant from the patient a fine crackling is heard like the noise made by rubbing the finger nails against each other. This noise sometimes stops for a few minutes. There is no contraction of the facial muscles. The larynx is slightly raised by contractions of the muscles attached to the hyoid bone. Pressure on the base of the tongue and on the velum palati causes the contractions to cease for a few minutes. The vocal cords showed no involuntary movements.

Sturman made a posterior rhinoscopic examination, and made out movement of the right tubal orifice as well as twitching of the arytenoids. There was no movement of the tympanic membrane. Nasal mucous membrane is healthy, there is no anæsthesia of the pharynx. Palate moves normally on phonation. Voice, deglutition, and electrical reactions are also normal. Patient is otherwise healthy, without any neurotic symptoms. *Guild.*

Crouzillac.—*Phlegmonous Inflammation of the Lingual Tonsil.* "Rev. Hebdomadaire de Laryn.," Mar. 26, 1898.

THE case of a man of seventy-six, who had not suffered previously with the throat. When first seen the patient was pale and ill, with a temperature 37.5°, and pulse of 85. The lymphatic glands of the subhyoid region were swollen moderately, and a sharp pain was experienced on external palpation about the cornua of the hyoid bone. Shooting pain was complained of in the left half of the tongue and left ear. There was a sensation of foreign body in the throat, with a slight dyspnoea. The voice had a nasal timbre, and speech was difficult.

On examination the tongue was found to be swollen and furred. The left anterior pillar was red, and both this and the uvula were cedematous, while both palatine

tonsils were somewhat inflamed. Traction on the tongue being impossible, Escat's tongue depressor was employed for laryngoscopy. The mirrors showed the base of the tongue to be thickly coated with pultaceous secretion, while the glosso-epiglottic fossæ were obliterated by swelling. The neighbouring parts were bright red. By palpation the region of the lingual tonsil was ascertained to be brawny, but no actual tumour could be made out. The diagnosis of acute catarrh of the lingual tonsil was made and general and local treatment instituted. When next seen, four days later, the hyoid region of the neck presented considerable external swelling on both sides. Much the same appearance existed in the pharynx as on the previous visit, but a distinct swelling, the size of a filbert, was detected by the finger in the right basal region of the tongue. Deglutition had become decidedly difficult, while the dyspnœa had increased. On the following day fluctuation was made out in the swollen lingual tonsil and the symptoms had assumed a grave aspect. Incision was now made with a guarded bistoury on the left side and about a soup-spoonful of blood-stained pus was evacuated. No pus was found on incision of the right side, but shortly after the attempt a quantity of pus was brought up. The symptoms speedily subsided and convalescence was uninterrupted. *Waggett.*

Pluder, F. (Hamburg).—*On the Place of the Tonsil in the Organism.* "Monats. für Ohrenheilk.," April, 1898.

1. As part of the hæmopoietic system, they form young leucocytes (daughter cells of the follicles), most of which pass into the circulation; but some escape on to the free epithelial surface, where they may, perhaps, exercise some protective action.

2. They excrete old leucocytes, which probably carry off with them effete products.

Their period of chief activity is in childhood and youth, when all the lymphatic organs are specially active, and when the thymus—a large, blood-forming gland—is disappearing.

With regard to the protective (phagocytic) action of the tonsils, which Gulland alleges is increased by hypertrophy, Pluder maintains that, while the whole mucous membrane has protective powers, the tonsils are its weakest point, and cannot even protect themselves, as shown by their liability to inflammation. Fraenkel's observation that children with enlarged tonsils enjoy a certain immunity from diphtheria is not generally confirmed.

The anti-toxic (or alexive) action of the organism is specially connected with the blood and the leucocytes. Immunity is not simply a question of phagocytosis, for it is certain that the vitality of the microbes must be first reduced before phagocytosis comes in.

Pluder finds adenoids most frequent in children of the middle and better classes; and he also observes that mentally deficient and backward children seldom show greatly enlarged tonsils.

The lubricating and absorptive functions of the tonsils are subordinate.

William Lamb.

Somers, Lewis (Philadelphia).—*Rheumatic Pharyngitis.* "Med. News," July 16, 1898.

DEALS with the question of the connection between rheumatism and tonsillitis, and refers to a case of very acute tonsillitis, with rheumatic enlargement of the joints, where the symptoms rapidly subsided under anti-rheumatic treatment. The author considers that it may be accepted as proven that the rheumatic affection may be the cause of the tonsillitis; or, on the other hand, articular rheumatism may result from affection through the tonsils. This, he points out, necessitates the recognition of the bacteriological origin of the disease, and refers to a case reported

by Wagner, where the throat symptoms were followed by rheumatism of the knee, and bacteriological investigation revealed the presence of the same micro-organism in both localities, thus proving the identity of the affection (?). He concludes by referring to the protean character of rheumatic affections of the oro-pharynx and the difficulty of a prompt diagnosis.

StGeorge Reid.

Walsham, Hugh.—*The Occurrence of Cartilaginous and Bony Nodules in the Tonsil.* "Lancet," Aug. 13, 1898.

IN the course of other researches on the tonsil, the author came across scattered masses of cartilage in certain cases, and in others small masses of bone, in the form of trabeculae, rings, and solid nodules. At first he thought that he had to do with an enchondroma of the tonsil—a rare condition, but one that has been described. But, on thinking over the matter, he came to the conclusion that this supposition was untenable, as the cartilage and bone trabeculae occurred on both sides. On reflection, it appeared that there was a close analogy between these cartilaginous masses in the tonsils and those small cartilaginous growths which develop in the lines of the branchial clefts, and which are found in the neighbourhood of the ear or lower down in the neck, sometimes only on one side, but more rarely symmetrically placed on both, or enclosed in the so-called branchial cysts, and also to the masses of cartilage that are found in the parotid gland.

The tonsil, according to Prof. His,¹ is developed very early in intra-uterine life—about the fourth month—by a simple folding in of the mucous membrane at a spot situated between the second and third branchial arches, and the remains of which are visible in the adult tonsil as a fold—the plica triangularis. As development proceeds, this primary infolding of the mucous membrane or primary crypt splits up at its base into numerous secondary crypts; and, by the swelling of the meso-blastic tissue lining the invagination, and by the early appearance of lymphoid follicles, the rudimentary tonsil is formed. Remembering, then, the position in which the tonsil is developed, the author thinks we may assume that these cartilaginous nodules are of foetal origin—that is, they are cartilaginous rests derived from the second branchial arch.

In the author's opinion there can be no doubt that the enchondromata that have been described as occurring in the tonsil must have their origin in these cartilaginous rests, which, from some unexplained reason, begin to grow and proliferate. Clinically, it is important to remember that this condition may occur in the tonsil as a congenital peculiarity. The bony trabeculae, it will be observed, were principally found in persons of advanced age; and, at first, one would be disposed to look upon the presence of bone as a mere senile change; but it was also found to a less extent in the younger persons. It is probable that these centres of ossification may be present from the first, as a small amount of bony material was found in the tonsils of the child, aged two years, observed by Prof. Roth.

Prof. Kanthack, to whom the microscopical specimens were shown, dissents altogether from the above theory. His view is that in these cases there is no embryonic inclusion, but merely a metaplasia of fibrous tissue into bone or cartilage.

There are references to other cases in literature; and the article is illustrated by three sections.

StClair Thomson.

¹ "Anatomie der Menschlichen Embryonen, dritte Partie," p. 82.

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